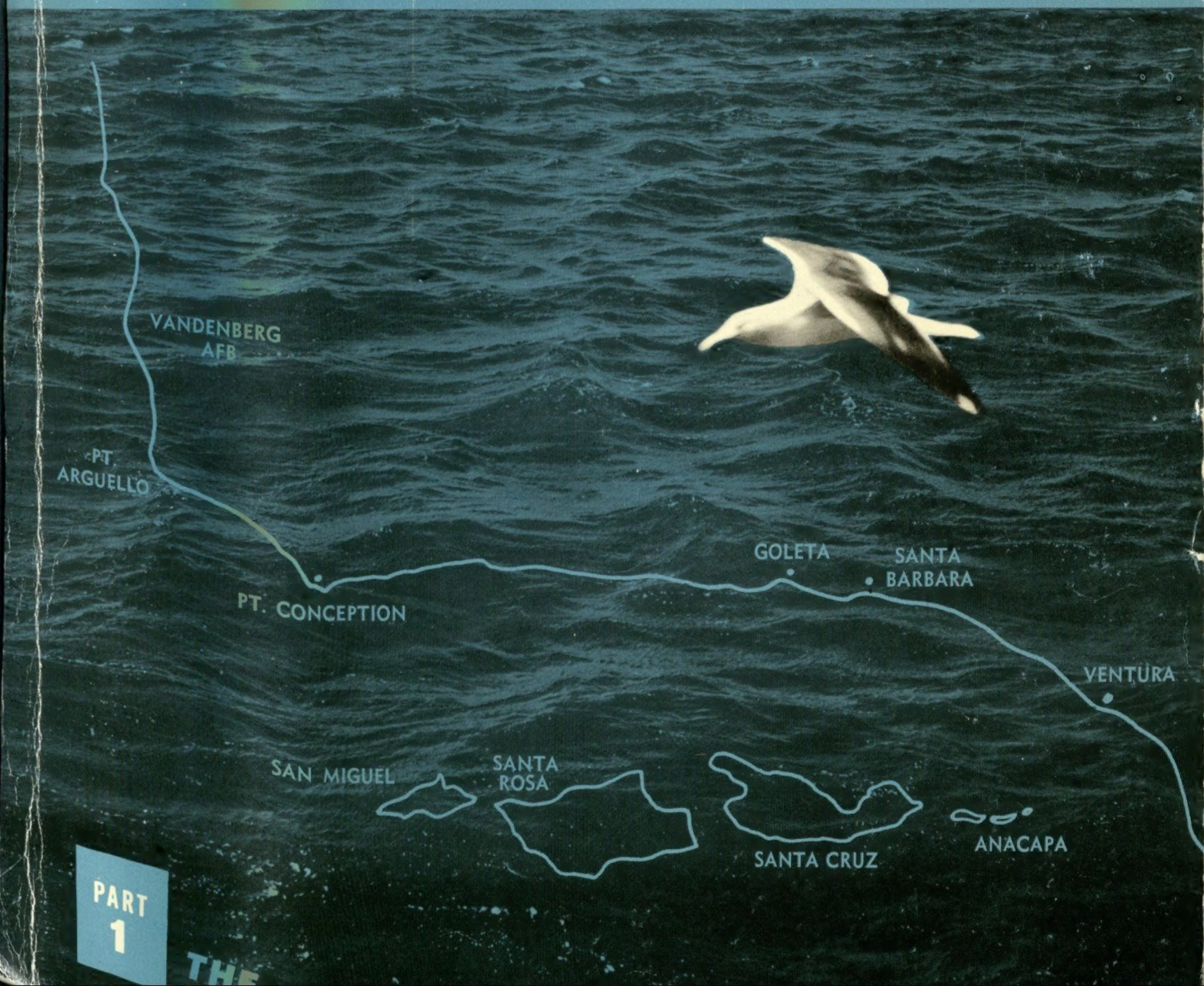
CALIFORNIA'S Sea Frontier

by Mabel M. Rockwell



PART 1

THE

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CALIFORNIA'S Sea Frontier

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PART 1: THE CHANNEL COAST

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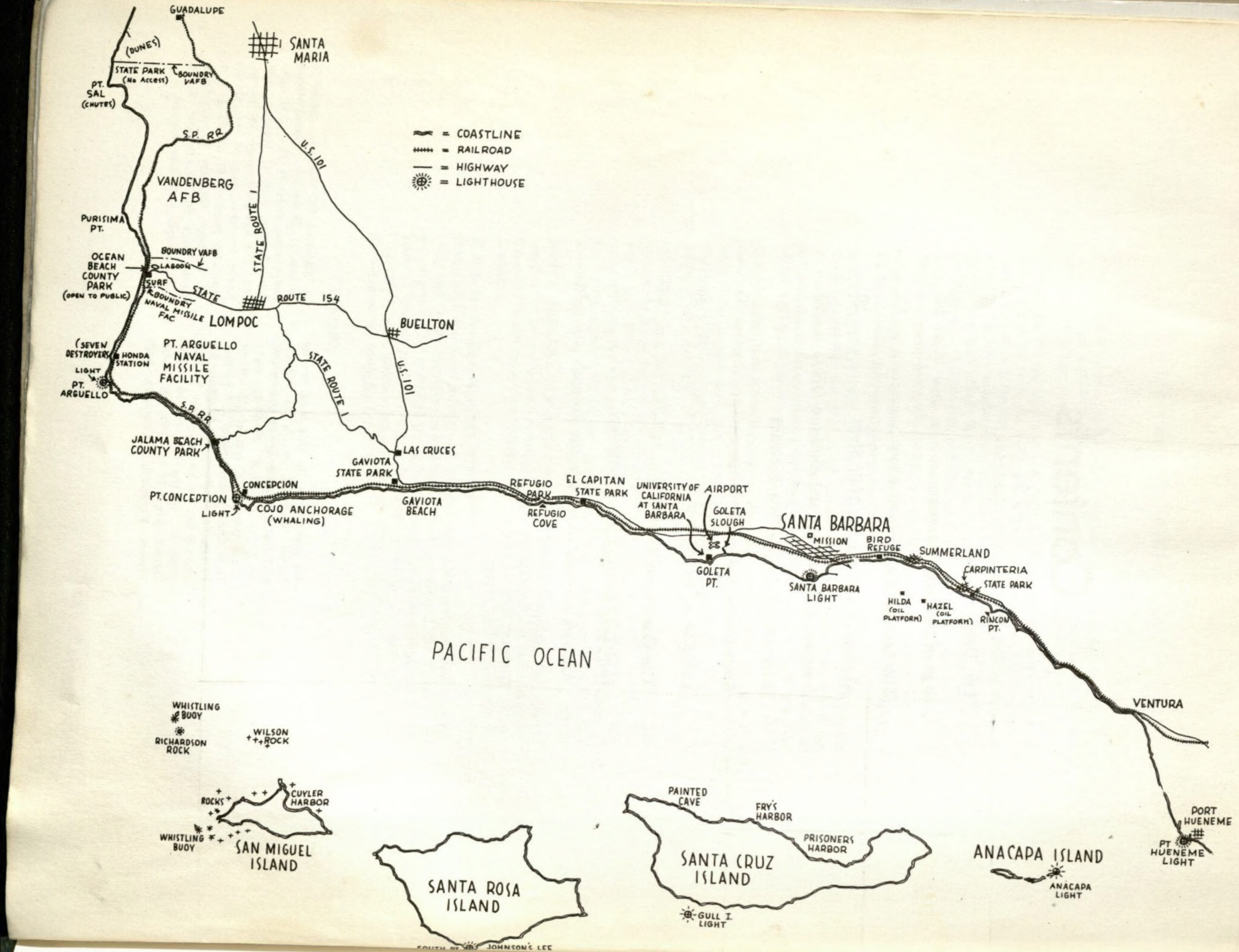
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SOUTH PT
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PAINTED CAVE
FRY'S HARBOR
PRISONERS HARBOR
SANTA CRUZ ISLAND
GULL I. LIGHT
ANACAPA ISLAND
ANACAPA LIGHT

From Santa Barbara westward around Point Conception extends a beautiful but dangerous shore. From this shore you may look out upon a sea frontier—a true stronghold of the American pioneering spirit.

Point Conception is called by the U. S. *Coast Pilot* "the Cape Horn of California." Around Conception howl winds from half a world away. The winds send great surging combers racing down the sea in endless array. Against these combers men in small boats battle to draw a living from the sea. Other men (and women too), driven by a deep-seated need to be close to the sea, venture forth in pleasure craft.

In this book you'll follow these men and women, and their boats, as they embark on the sea frontier —from Santa Barbara west around Conception.

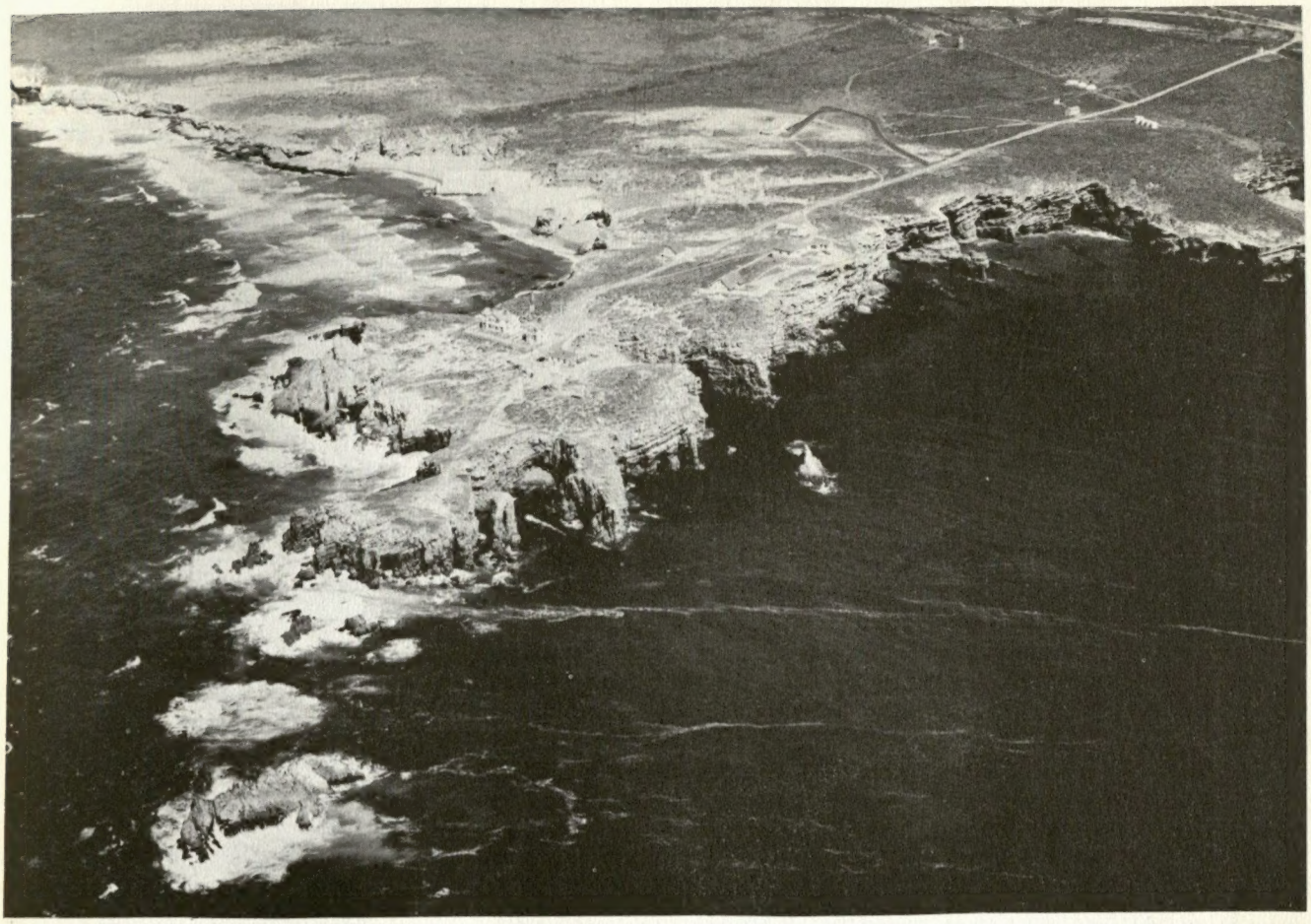
The Danger Coast

Below Point Conception, a sharp corner on California's coast, the shore turns eastward for fifty miles. This south-facing shore, unique on our Pacific coast, forms the backdrop for Santa Barbara's sea frontier.

The offshore islands of San Miguel, Santa Rosa, Santa Cruz and Anacapa mark off an ocean corridor some 25 miles wide between themselves and the mainland. In 1602 the Spanish explorer Sebastián Vizcaino gave this sea corridor the name of "la Canal de Santa Barbara." The "Santa Barbara" part of the name is easy to understand, since Vizcaino arrived in the region on December 4, a day devoted to commemorating the birthday of Saint Barbara. But the term "canal" (translated "channel") is misleading. You'd ordinarily expect a canal, or channel, to be a reasonably calm, protected body of water. Santa Barbara Channel is anything but.

With momentum gained through thousands of miles of travel across the Pacific Ocean, northwest winds pivot around Point Conception and whoop eastward down Santa Barbara Channel. "A capful of wind will be a bagful here," remarked Richard Henry Dana in his *Two Years Before the Mast.* Occasionally, for variety's sake, the wind reverses direction and blows back up the Channel from the southeast, propelled by a storm of tropical origin.

Coastline, looking north from Point Conception toward Point Arguello.



Point Arguello, 12 miles north of Point Conception. If Point Conception may be called "the Cape Horn of the Pacific," Point Arguello certainly deserves the name "Graveyard of the Pacific." Many vessels intending to round Point Conception and enter the comparative safety of Santa Barbara Channel, have fallen into the jaws of Arguello instead. Four hundred and fifteen lives were lost when the gold-laden *Yankee-Blade* struck the rocks of Arguello in 1854. Point Arguello now has a lighthouse of 1,100,000 candlepower, visible 17 miles at sea; a diaphone fog horn; a 302-kilocycle radio beacon (— — —) and a Loran (Long Range Aids to Navigation) station.

Or the wind may decide without warning to blow strongly offshore in what Southern Californians call a "Santa Ana."

Between blows, there will frequently be fog, dense and impenetrable. The luckless fisherman or shipmaster caught offshore in the fog must grope his way by compass and lead line or fathometer—or by radar scope if his craft is equipped with one (not likely in the smaller boats).

Since the Spanish explorer Cabrillo sailed along the coast in 1542, a long procession of treasure-seeking galleons, whalers, wind-jammers, otter-hunting craft, smugglers, pirates, warships, freighters and passenger vessels has battled its way up the Santa Barbara Channel and around Point Conception. In *Two Years Before the Mast,* Richard Henry Dana says that his ship was "blown several hundred miles off the coast" in her effort to round Conception northbound for Monterey.

Many vessels have been wrecked on the coast near Point Conception and Point Arguello or on the rocks of the Channel Islands. The list includes:

The *Winfield Scott,* a sidewheeler loaded with passengers carrying gold dust from the Mother Lode; Anacapa Island, 1853.

The *Yankee Blade,* a sidewheeler said to have been transporting $16,000,000 in gold bullion from the California mines; Point Arguello, 1854.

The *Santa Rosa,* a passenger steamer beloved by Santa Barbarans of the gay nineties; Honda, 1911.

The *Delphy,* the *S. P. Lee,* the *Young,* the *Woodbury,* the *Chauncy,* the *Fuller,* and the *Nicholas*—all destroyers of the United States Navy; Honda, 1923.

The *Harvard,* luxury ship of the San Francisco-Los Angeles run; Point Conception, 1938.

The *Chickasaw,* carrying freight and passengers; Santa Rosa Island, 1962.

This small fishing boat went aground on the rocky shore only a few miles north of Santa Barbara harbor. She is typical of many small craft which come to grief while attempting to make their way along the sea frontier.

Point Conception Light Station. The gale-swept headland on which the lighthouse stands is often called "the Cape Horn of the Pacific." When the Spanish explorer Sebastian Vizcaino discovered the headland in 1602, he named it "Punta de la Concepcion" in honor of a holy day of the church. The name "Concepcion" has been anglicized to "Conception" on present-day charts and maps.

Point Conception Light is famous for its Fresnel lens, which was made in France and brought around the Horn in 1854. Originally, a kerosene lantern burned inside the lens and an arrangement of weights and pendulum rotated the lens. Today the lantern has been replaced by a 100-watt electric bulb and the pendulum-weight device by an electric motor. So efficient is the Fresnel lens that from the 1000-watt electric bulb, a beam of 1,300,000 candlepower is sent 18 miles to sea. There's a standby diesel generator for the electric power; but if both the diesel and the regular power source fail, there still remains the ancient mechanical weight device, kept meticulously in working order by the Coast Guard personnel. There's even an oil-operated Coleman lantern ready to be placed in the lens if all sources of "juice" go out of commission!

Two of seven Navy destroyers that went aground just north of Point Arguello, September 8, 1923. The *S. P. Lee,* on rocks at right, was second in the southbound line of destroyers led by the U.S.S. *Delphy*. When the *Delphy,* flying the flag of the squadron commander, gave the signal to execute a 55-degree course change to port (left), the *S. P. Lee* hadn't a chance. She followed her leader directly onto the rocks of Arguello. The *Nicholas* (shown above at left, No. 311) was seventh in the destroyer column. She swung desperately seaward when her skipper saw the trouble ahead; but she didn't quite make it. Destroyers behind the *Nicholas* managed to escape the rocks. As a result of heroic rescue efforts all but 23 of the 600 men on the seven wrecked ships escaped death in the pounding surf or the jagged rocks.

The tragedy was attributed to an in-coast "set" of current which caused an error in the dead-reckoning calculations made by the squadron commander. There was a radio-compass station on Point Arguello in 1923, but it was a primitive type. The shoreside station would receive a signal from a ship at sea, and would attempt to determine, on the basis of that signal, in what direction the ship might lie with respect to the station. Unfortunately, there was a basic ambiguity in the station's interpretation of the incoming signal. For example, the station could tell that a ship at sea was either due north *or* due south of the station; it couldn't determine which. At 8:39 P.M. on that fatal evening, the radio station on Point Arguello sent the *Delphy* the following message: "You bear 333 degrees true from us." This would mean, freely translated: "You're almost due north of us." However, the squadron commander on the *Delphy* had computed through the use of dead reckoning (time of travel multiplied by estimated speed of travel) that he was well to the south of Point Arguello and hence opposite the entrance to Santa Barbara Channel. Knowing the possible ambiguity in the radio bearing from Arguello, the squadron commander figured the bearing should be interpreted in terms of its *reciprocal* — i.e., 333 degrees minus 180 degrees, or 153 degrees. This would put the *Delphy south* of Arguello. So the squadron commander gave the signal for the entire column of destroyers to turn 55 degrees to port (left) — which took the first seven vessels directly onto the rocks near the tiny Southern Pacific coastal railroad siding of Honda, where the *Santa Rosa* had gone ashore in 1911.

Freighter *SS Chickasaw* on rocks on seaward side of Santa Rosa Island. She went ashore in a dense fog, February 7, 1962, carrying a full cargo of freight and several passengers. The passengers, after remaining aboard the grounded vessel for several days, were landed by breeches buoy on Santa Rosa Island, and transferred to Santa Barbara after storm conditions subsided. The crew of the vessel also escaped without loss of life.

The steamer *Santa Rosa* on rocks near Honda, just north of Point Arguello, 1911.

Tony Ottman of the abalone boat *Paula* holds cat which clung for four days to the top of the mast of the fishing boat *Ruth K* when the latter sank in shallow waters off San Miguel Island. Ottman, passing the island aboard the *Paula,* noticed the cat on the mast of the *Ruth K* and went ashore to rescue the stranded crew.

Saga of the Wet Pussycat

Many ships, large and small, have come to grief on the rocky coasts that line the Santa Barbara Channel. One such was the *Ruth K,* a 34-foot fishing vessel that was battered by huge waves and sunk in shallow waters off the coast of windswept San Miguel Island.

Owner Cecil Wilson, when he saw there would be no way to save his ship, ordered all hands over the side. They swam through the heaving seas to a nearby beach, and fell exhausted on the sands. In leaving the sinking *Ruth K,* they had to abandon the ship's cat, for there was no way to persuade her to attempt to swim to shore.

Once on the beach, the men knew they were safe; but they were cold and needed shelter. They gave no thought to the *Ruth K* or to the cat.

And the cat was thinking of only one thing; how to preserve this most vital of her nine lives. As the vessel filled and went down, she had sought higher and higher points of safety, until finally, only the topmost section of the mainmast remained above water. But now the *Ruth K* was on the bottom, and the cat was safe for the time being.

Four days and nights passed, and still pussy sat atop the mainmast, her tail dragging in the water every time the sea heaved, her precarious perch retained only because she never once relaxed her iron grip on the bobbing mast.

It was the abalone boat *Paula* that finally rescued all hands. Diving tender Tony Ottman spotted the wet pussycat, immediately deduced what had happened, and called to Skipper Laddie Handlemann that a boat had been wrecked. On the beach, they found the footprints of the crew and followed them to an abandoned shack. There were the men off the *Ruth K,* cold, hungry and thirsty. They had survived on the contents of a few cans of stewed tomatoes found in the shack.

The Coast Guard was notified and a cutter arrived to take Cecil Wilson and his crew back to Santa Barbara. Tony Ottman brought the cat in on the Paula. If you look closely at the photograph, you'll see that a bowl of milk and a warm dry place to cuddle in did marvels for her.

Crewman Dana Enlow (left) and skipper Harry Barrington draw in the *Christine's* net from the sea.

The Commercial Fishing Boats

You are 20 miles at sea off Point Arguello. The sea is rough. You are north of Conception. Your boat, 38 feet long, is surrounded by dense fog.

You have been dragging the ocean depths for bottom-lurking fish. As you pause for a moment's rest you gradually become aware of a persistent sound.

You identify the sound as the throb of engines—powerful engines such as those of an ocean-going freighter or oil tanker.

The sound grows rapidly louder. It seems to come from the north; but you can't be sure of the exact direction. Fog plays tricks with sound waves.

Shall you move your boat? Pour on the heat and get out of there fast? If you move, *which way* shall you move? The sound now seems to come from all directions at once. *Shall* you move—possibly right into the path of the oncoming vessel?

The question is suddenly resolved for you. The throb becomes an all-encompassing roar. Out of the fog looms a great black shape—a ship which passes so close to your boat that you can't even read the complete name on the bow! You have time to distinguish only two or three enormous letters of the name—then the vessel is gone, engulfed in the fog.

You mop sweat from your forehead. "Close," you remark to your crew. You return to your occupation of drawing fish from the sea.

An unusual occurrence? Not at all. Such narrow escapes are commonplace events in the lives of men who make their living on Santa Barbara's sea frontier.

One such individual is Robert Knapp of Santa Barbara, owner and skipper of the drag-boat *Katherine*. Not long ago, Knapp had an experience similar to that just described.

"All the steamer tracks converge around Point Conception," Knapp explains. "The area is the crossroads of the Pacific. Freighters and oil tankers, whether traveling north or south along the coast, cut as close as they dare to Conception in order to save time. We fish in the same area because the region offshore from Arguello and Conception contains some of the best fishing grounds on the entire Pacific Coast."

Even in dense fog the big ships travel fast, relying on radio, loran and fathometers for keeping track of their position. In addition, all the large vessels are equipped with radar, which furnishes a picture of the coastline and of obstacles ahead. However, a fishing boat or other small craft may ride too low among the great swells of the ocean to show up well on the radar scope of an oncoming vessel. One drag boat operating out of Santa Barbara harbor brought up in its net the stern portion of a yacht. Appearances indicated that the yacht had been cut cleanly in two. It is said that a freighter or an oil tanker may sever a tiny boat amidships and proceed on her way without the crew of the larger vessel being aware that a tragedy has occurred.

"Yet we have to take the risk," says Knapp. "The big ships have to hold their schedules. The fishermen have to find the fish. Even in Santa Barbara Channel or on the seaward side of the Channel Islands, the freighters and the oil tankers are constantly passing."

Fortunately, much of the commercial fishing in the Channel area is carried on fairly close to the rocky shores of the Channel Islands. The big ships generally stay away from these shores—for their own good!

In addition to dodging large vessels, fishing-boat skippers sometimes have to dodge missiles, or parts thereof. The coastline about 30 miles northward from Point Conception is the site of Point Arguello Naval Facility and Vandenberg Air Force Base. These shoreside installations contain emplacements for launching guided missiles and space vehicles. The latter are sometimes intended to go into orbit as earth satellites; at other times the vehicles may be aimed into the really far-out regions of space. Once in a while, a missile or an intended space vehicle goes loco and has to be destroyed before it travels very far from home. To protect shipping against the possible danger of fragments falling from misguided missiles, marine navigation charts show the seaward extent of the Pacific Range and other potential danger areas. However, between missile launchings the little fishing craft dart into the offshore range areas, though not into the completely forbidden region within the 1-mile limit immediately opposite the military bases.

When missile launchings are contemplated, the military authorities try to warn the fishing and other craft in time. The authorities also obligingly tip off the fishing boats when storms are known to be approaching from the North Pacific.

The *Elsie B.* is a drag boat somewhat smaller than the *Christine.* She uses cable drums instead of a reel at the stern to handle the net. Owner Harold Durrah took the *Elsie B.* to Honolulu in 1961 — the first and only power-operated commercial craft of its size to make the passage successfully from Santa Barbara harbor. Durrah, who was accompanied by his wife and small child on the trip, had drums of diesel fuel lashed to the after deck to insure a sufficient supply to reach his goal.

Skipper Harry Barrington brings the dragger *Christine* to her moorings in the harbor. The *Christine's* heavy reel for handling the drag net is visible at the stern.

Purse seiner *Frances Marie* of Monterey, visiting Santa Barbara harbor. Turntable on after deck carries folded seine. On top of the net rests one end of the seine skiff, with the utility skiff tucked inside.

Despite problems involved in dodging ships, missiles, and sudden storms at sea, a great many commercial fishing craft operate regularly out of Santa Barbara harbor. You'll hear fishermen speak of dragging, harpooning, gill-netting, and trolling. Lobsters and crabs are caught in traps which are often set far at sea. Purse seiners from Monterey and points north sometimes put into Santa Barbara harbor for supplies or minor repairs.

Dragging

Dragging, as its name implies, consists in pulling a net along the bottom of the sea. In earlier days, drag nets were pulled by two boats, one at each end of the net. Nowadays a single boat can pull a drag net. A "sheer board" is secured in a slanting position at each end of the net. A steel cable is brought from each sheer board to the boat. When the boat begins to move forward through the water, the action of the water pressure on the slanting sheer boards causes them to move sidewise in a direction outward from the center line of the boat. This action spreads the ends of the net well apart so the fish can come in. When the boat stops moving, the spreading action ceases; the ends of the net come together; the fish are trapped.

Huge power-operated reels or drums on the deck of the drag boat wind up the steel cables and haul in the fish-laden net.

Fish brought in by drag boats operating out of Santa Barbara harbor include petrale sole (the most valuable kind); English sole; rock cod; lincod; and other varieties of bottom fish.

Fisherman's nightmare. A net full of dogfish!

Gill-Netting

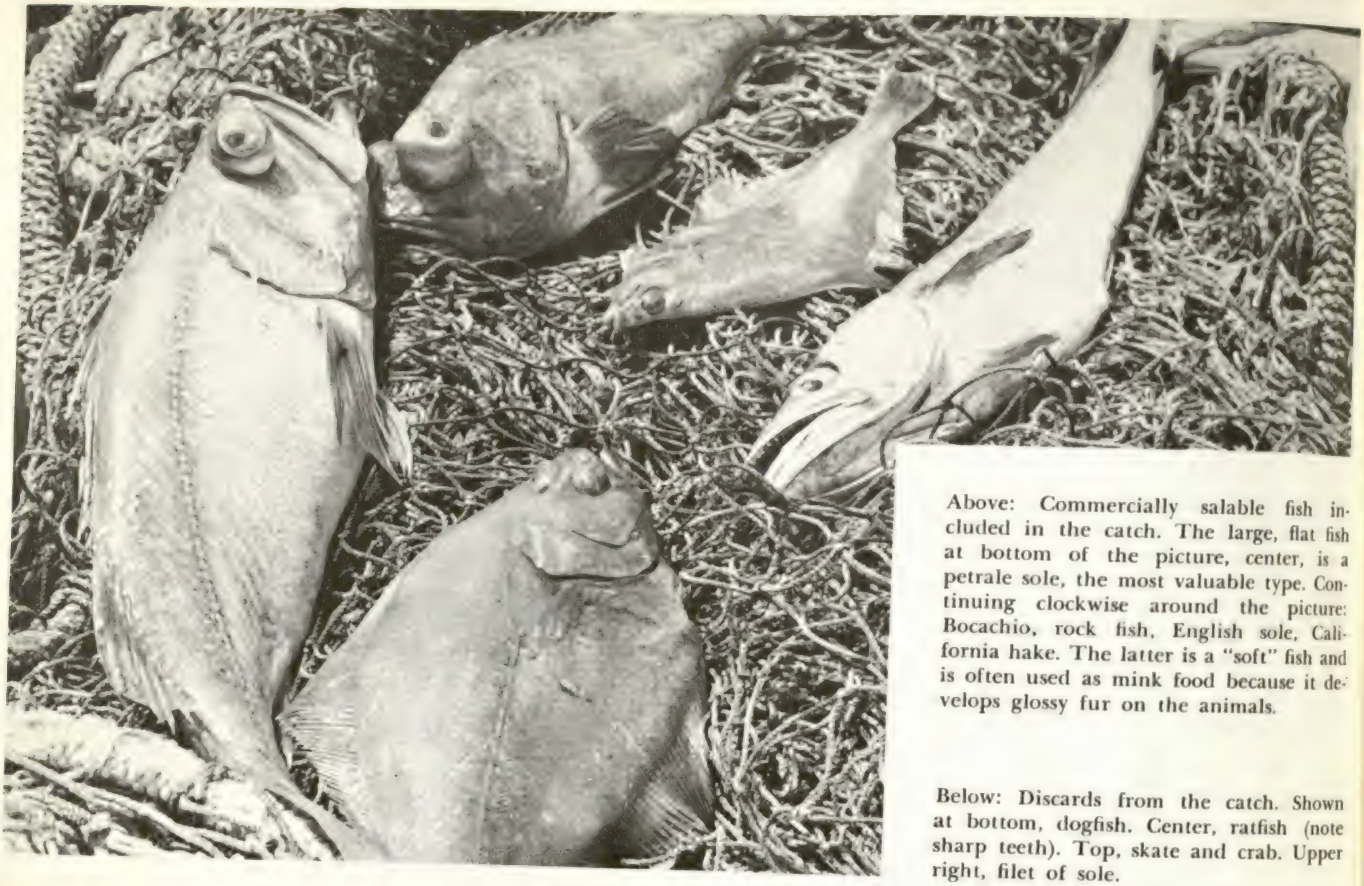
Gill-netting consists in using a net whose mesh openings are just the right size so that adult fish, of the kind you wish to catch, can stick their heads through the openings and get caught there by the gills like a cat with its head stuck in a picket fence. It is said that a normally intelligent cat, endowed with a set of normally spreading whiskers, will usually take warning in time and not attempt to enter an opening from which it can't retract its head. Apparently, the varieties of fish which are gill-netted lack intelligence, or whiskers, or both.

In Santa Barbara Channel, barracuda are sometimes taken by gill-netting. Airplane "spotters" are often employed to find promising schools of fish. The spotters transmit instructions via radio to waiting boats.

Barrington (left) and Enlow (right) sorting the catch. Dogfish at left must be discarded.

Purse Seining

Purse seining is a form of surface fishing in which a special kind of long, shallow net is used. A "draw-



Above: Commercially salable fish included in the catch. The large, flat fish at bottom of the picture, center, is a petrale sole, the most valuable type. Continuing clockwise around the picture: Bocachio, rock fish, English sole, California hake. The latter is a "soft" fish and is often used as mink food because it develops glossy fur on the animals.

Below: Discards from the catch. Shown at bottom, dogfish. Center, ratfish (note sharp teeth). Top, skate and crab. Upper right, filet of sole.

string" runs through rings attached to the lower edge of the net. When the purse seiner encounters a promising school of fish, a large, flat-bottomed skiff is put overboard. One end of the net is secured to the skiff, which stays in one spot while the seiner, conveying the other end of the net, chugs hopefully around the school of fish. When the seiner gets back to the skiff, the two ends of the net are made fast. The draw line along the lower edge of the net is tightened up. The net then becomes a "purse" from which the fish can't escape.

Purse seiners from nothern ports sometimes catch sardines in the area to seaward of the Channel Islands. No purse seiners are based in Santa Barbara harbor.

Harpooning

In waters offshore from Santa Barbara, the gigantic broadbill swordfish is taken commercially by harpooning.

The broadbill swordfish may weigh from 200 pounds (a mere runt!) to 500 pounds or more. The largest swordfish even taken by "Steve" Stevens, veteran Santa Barbara fisherman, weighed 600 pounds after removal of sword and fins. A swordfish may be 8 to 10 feet long, or more. Stevens stacks swordfish crosswise on his boat, the *C. H.*—and the swords hang over the rail! It requires two men hauling on a double purchase tackle to hoist one of the larger specimens aboard the boat.

The man who undertakes to capture a swordfish must have skill, experience, steady nerves, a steady hand, an accurate eye—and plenty of muscle. Once harpooned, the swordfish "sounds" into the ocean depths and often fights the line for a long time before he caves in.

The search for the swordfish is conducted typically from a boat 35 to 40 feet long equipped with a 30-foot beam or "plank" jutting forward from the bow. At the extreme forward end of the plank is a sketchily-enclosed pulpit in which the harpooner stands to make his cast. A swordfish boat has a lofty crow's nest equipped with auxiliary controls whereby the skipper "cons" the boat as he cruises about looking for fish. When the characteristic black dorsal fin and tail of a swordfish appear, the skipper usually goes out on the harpooning plank himself, leaving the handling of the boat to his crew. Harpoon pole upraised, the harpooner awaits the single split second during which the black target appears in position directly beneath the pulpit. He makes his cast. If he hits his mark the fish sounds at once, taking with him the detachable dart which formed the tip of the harpoon pole. The pole itself, after separation of its tip or dart, is retrieved by a light line. The dart bears a ring through which is secured a long, very strong line. As the fish takes off, the line runs out after him. At intervals along the line, floats or buoys are secured, which act as drags to slow the progress of the fish. In some cases the fish gives up before the line is all paid out. If, on the other hand, the fisherman sees that the fish is still going strong while using up most of the line, he (the fisherman) has to jump into a skiff and handle the line by hand, keeping a strain on the line at all times to prevent the fish gaining momentum that might snap the line. Eventually (if the fisherman wins) the fish is hauled to the skiff and may be staked out on location with buoy and flag while the fisherman rows hastily back to his boat because another target has been sighted.

If you can imagine playing a 600-pound trout on a big, thick hand line, you'll get some idea of why the swordfisherman needs muscle as well as skill and courage.

Swordfish are migratory and appear offshore when they feel like it—usually between June and October. As swordfish season approaches, a sort of fever develops among Santa Barbara commercial fishermen. They take their boats, previously engaged in more staid forms of fishing, out of service and begin to mount thirty-foot planks on them. They maneuver the ungainly craft about the harbor to the alarm of uninitiated onlookers. They fuss endlessly with gear and rigging. A typical conversation might run like this:

"Hey, Jack—what's the big idea? You seen some swordfish?"

"No, Joe. I haven't seen any swordfish. But I thought I'd get ready—just in case."

Trolling

Many people seem to think that trolling consists in merely pulling a baited line behind your boat while you look at the sky and dream. Commercial trolling is hard work; you dare not take your eye from your lines for even a moment.

Commercially, trolling is done chiefly for albacore (in the south) and salmon (in the north). Salmon seldom venture south of Point Conception. But albacore (the only fish that is allowed to be labelled "white tuna" when canned), abound in waters offshore from Santa Barbara, and as far south as you want to go. Many Santa Barbara commercial fishermen abandon other pursuits and range far to sea for albacore during the summer season.

It is said that former bankers, business men, and engineers have joined the commercial albacore

Urvin "Steve" Stevens poises in pulpit of his boat, ready to cast harpoon into swordfish whose dorsal fin is seen just to left of tip of harpoon. (Tail fin is visible at right of harpoon.)

trolling fleet. Husband-and-wife teams are prevalent. One male school teacher, member of a Santa Barbara family, takes off from the classroom every summer and goes commercial albacore fishing.

Lobster Trapping

Very large, delicious lobsters (the Pacific coast variety are really crayfish, but the fact isn't usually mentioned) are caught in good quantities in wire traps that may be set in remote locations such as the seaward side of the Channel Islands. The traps are usually baited with the small, black species of abalone which cling in great numbers to rocks exposed at extreme low tide.

Whales and Such

While fishing or lobstering off the Channel Islands, alert men such as Steve Stevens, and many others, have plenty of opportunity to observe and study the wild life of the region. Stevens has seen and photographed many very tame sea-lion herds on islands and rocks of the Anacapa area. He has encountered killer whales at close range. Once a baby grey whale nuzzled his boat, apparently mistaking it for its mother. When the mother finally came swimming along, the baby followed her obediently—to the great relief of Stevens.

The baby "grey" whale was pure white, like a junior version of *Moby Dick*.

Harpooning pulpit and plank in place on craft owned by swordfisherman Glen Miller.

Stevens and crew hoist broadbill swordfish aboard Stevens' boat, the *C. H.*

Swordfish is tight fit in Stevens' boat. Largest swordfish caught by Stevens weighed 600 pounds after removal of sword and fins.

Bibliography

Detailed information about offshore fishes and fishing may be obtained from the following pamphlets available from the State of California Department of Fish and Game, 722 Capitol Avenue, Sacramento, or from the State Printing Office. There is a small charge for some of the pamphlets:

California Fishing Ports, by W. L. Scofield, Marine Fisheries Branch, Fish Bulletin No. 96, 1954.

Common Ocean Fishes of the California Coast, by Phil M. Roedel, Marine Fisheries Branch, 1953.

An Outline of California Fishing Gear, by W. L. Scofield, Bureau of Marine Fisheries; reprinted from the quarterly publication *California Fish and Game,* October, 1951.

Purse Seines and Other Roundhaul Nets in California, by W. L. Scofield, Bureau of Marine Fisheries, Fish Bulletin No. 81, 1951.

Trolling Gear in California, by W. L. Scofield, Marine Fisheries Branch, Fish Bulletin No. 103, 1956.

Offshore Fishes of California, by John E. Fitch, Marine Biologist, 1958.

Inshore Fishes of California, by John L. Baxter, Marine Biologist, 1960.

Digest of Commercial Fish Laws, current. (Free at any fishing headquarters, or Dept. of Fish and Game.)

1962 California Sport Fishing Regulations. (Free at any fishing headquarters).

Abalone—Steak on the Half Shell

If you happen to be at Santa Barbara harbor around three o'clock some damp and foggy morning, you may observe an "ab boat" slipping out to sea.

The term "ab boat" is short for "abalone boat," a work boat engaged in gathering succulent edible abalone from rocks beneath the sea.

It's easy to recognize an abalone boat. Typically, such a boat is short and stocky. She has an elevated, open bridge completely exposed to the weather. On the bridge there stands, characteristically, a skipper protected from the elements only by dungarees and sweater or hooded sweat shirt.

If you're at the harbor again two or three nights later, you may notice the same abalone boat returning from her trip to sea. Her red and green side lights are barely visible through the gloom. A tiny white light flickers fitfully at her abbreviated masthead. Dull illumination filters out through spray-encrusted portholes beneath the open bridge.

On the bridge still stands the hooded skipper, weary but alert. Behind the skipper, on the after deck, huddles the crew, soaking wet amid the dripping catch of abalone.

Tomorrow, the catch must be sold. For tonight, however, the skipper secures the craft beside another abalone boat. Skipper and crew stumble ashore as though in a trance. The only words one can distinguish as the men head wearily for home are "bed" and "hot coffee."

What sort of men operate the abalone boats? What is the edible creature they seek?

The Abalone

Scientists classify the abalone as a "marine snail." This description sounds a bit unappetizing. It might be more appropriate to describe the abalone as a seagoing steak protected by a shell.

An adult abalone may measure 6 to 11 inches across its longest dimension. The shell of the abalone is coarse and ugly on the outside, but beautiful on the inside. The pearly, iridescent lining of the shell is used to make buttons, cuff links, and many interesting novelties, including jewelry.

The various species of abalone are picturesquely named according to colors predominating in shells and meat. Varieties commonly encountered are:

Red abalone: Large; grows in rocky areas with surf; prized as food by human beings and sea otters.

The abalone in its natural habitat in the depths of the sea is well camouflaged among surrounding marine growth. Suction between abalone and rock is so strong that it is necessary to pry the creature loose with a sharp-edged bar. Despite its unattractive appearance, the abalone makes good eating. At right, a succulent abalone steak is shown ready to be popped into a freezer package by Mrs. Dan Wilson, wife of diver Dan Wilson, proprietor of Ocean Harvest Fisheries, Santa Barbara. Dan, Jr. watches in background.

Gene's Folly, typical commerical abalone boat of the Santa Barbara sea frontier. The hull of *Gene's Folly* is 36 feet long and was converted from a Higgins boat used as a landing craft during World War II.

Pink abalone: Found in bays and rocky areas. Feeds among kelp. (Yes, abalone have file-like tongues with which to rasp tiny succulent algae, their favorite breakfast food, off the rocks.)

White abalone: Extra tender meat. Grows deep.

Green abalone: Pretty shells, but poor eating.

Black abalone: Dark meat. Grows in big colonies on rocks exposed at low tide. Some humans like the meat; others use it mainly for lobster bait.

Except in the case of the black abalone, the body of the abalone is white, solid, smooth-textured, and thick enough to be cut (by an expert) into two or even three slices. It is delicious when taken freshly from the sea, pounded lightly, and broiled over a beach fire. From time immemorial, dwellers by the California shore have regaled themselves with abalone so prepared. The prehistoric Pacific Coast Indians apparently shared the modern taste for abalone.

In recent times, the technique of deep freezing has made it possible to pack abalone steaks in cartons and ship them to distant markets. This has greatly increased the importance of the abalone fishery which centers in waters offshore from Santa Barbara. However, to prevent destruction of the supply, state laws forbid the shipping of abalone, taken on the California coast, to points beyond the boundaries of California. Despite this limitation, there's plenty of demand to keep forty to forty-five regular commercial abalone divers, and as many more part-time semi-professionals, gainfully occupied on boats based in Santa Barbara harbor. Local divers like to say that Santa Barbara is "the abalone capital of the world"—well, of California, anyway.

Skipper-diver Bob Colomy of *Gene's Folly* is a rugged individualist who likes to seek abalone in regions remote from those being combed by other commercial divers. "When you meet another diver walking toward you on the ocean floor it's getting too crowded," says Colomy.

At upper left, Mike, the diving tender, cleans faceplate. He is seated on compressor which supplies air to diver's mask through hose shown at left.

Upper right, William Exline, owner-skipper of the *Rose B.*, prepares for a dive. Note weighted boots with protective plates. At left, Exline wears a rubber "dry suit" which fastens in front with a twist similar to that used for keeping air in a child's balloon. The suit is not inflated.

Below left, Mike equips Exline with gloves needed for protection against sharp rocks and spiny creatures of the deep. Below right, tender gives diver the abalone bar which has calipers set to measure abalone for compliance with legal size requirements.

On facing page, Exline goes deep in search for abalone. Air comes bubbling out from his faceplate, which receives its supply through rubber hose from compressor on boat above. Commercial abalone divers are not permitted to use SCUBA (Self-Contained Underwater Breathing Apparatus) which is favored by amateur divers. Commercial divers must take their abalone at depths of 20 feet or more.

Successful conclusion of an abalone-diving expedition. Exline and Mike hoist part of catch to waiting buyer on Stearns Wharf. Under favorable conditions, a three-day diving trip may yield 100 dozen abalone.

The Abalone Diver

The commercial abalone diver is usually a free-wheeling, independent individualist. Young and rugged, he punches no time clock and recognizes no boss except the weather and the sea. He depends only on his own skill and daring for success in his business. For these reasons, the commercial abalone diver may perhaps be regarded as a last surviving example of the pioneering frontiersman.

Typical of many commercial abalone divers operating on Santa Barbara's sea frontier is William Exline of the *Rose B*. Like many abalone divers of the area, Exline owns and operates his own boat. On the deck of the boat is a compressor. When he dives for abalone, Exline wears a face mask which receives air from the compressor by way of an air hose and pressure regulating valve.

Abalone may be taken commercially only at depths greater than 20 feet. Often the commercial diver goes to 100 feet. He stays down for long periods of time; so his equipment must be extremely reliable. In contrast to Exline, many commercial divers use helmets or "hard hats" for diving. Most of the men wear rubber dry suits, not inflated.

Exline's boat is of the type known as a "dead boat." This term means that the boat remains anchored on one spot while Exline goes over the side and garners abalone from an area extending as far as his air hose will reach in all directions. He leaves his diving tender (who is his only crew member) aboard the boat to keep the compressor running and be sure the air hose doesn't snag. When he has finished on one area, Exline comes to the surface, climbs into the boat, moves it to some other location, and then repeats the entire process.

In contrast to the "dead boat," the "live boat" carries an additional crew member who is able to operate the boat and keep it moving slowly along the surface of the sea while the diver walks below. This procedure eliminates the time lost by the diver in coming to the surface at frequent intervals to move the boat; but it requires the return from the abalone catch to be divided among a larger crew.

In his "dead boat" operation, Exline has had several narrow escapes from death. Twice his boat has dragged her anchor while he was below, pulling him along the bottom by the air hose like a calf on the end of a rope. On one occasion he sat on the anchor to hold it down. Five times Exline has had "the bends"—dread reaction caused by staying down too long or coming up too fast. Twice he had to be rushed to a decompression chamber at the Port Hueneme naval facility in Ventura County.

Under favorable conditions of wind and weather, Exline usually does his abalone diving along the shores of the Channel Islands and stays out about three days at a time. (This is as long as the abalone will "keep.") During a three-day trip, Exline may gather as many as 100 dozen abalone. Sometimes his trip is cut short by a sudden windstorm, whose occurrence Exline may be able to predict well in advance because of his long familiarity with weather signs at sea. When he knows a storm is imminent, Exline heads for Santa Barbara harbor and joins the long procession of abalone boats usually seen trailing into the harbor under such conditions.

Despite the possible hazards of "bends" and broken air lines and storms at sea, Exline shows no inclination whatever to abandon his career as a modern frontiersman of the sea.

Bibliography

More details about the abalone fisheries of California, together with handsome color illustrations of the various kinds of abalone, are contained in the following pamphlet:

Review of the Abalone in California, by Keith W. Cox, reprinted from *California Fish and Game,* Vol. 46, No. 4, October, 1960. The booklet is obtainable at a small cost from the California Department of Fish and Game, or from the State Printing Office, Sacramento.

Seagoing Roustabouts and Offshore Oil

If you spend any time around Santa Barbara harbor you soon become familiar with the *Packer,* the big, seaworthy-looking supply boat that bustles about between the harbor and the oil derricks "Hazel" and "Hilda" a few miles down the coast.

You will also notice other oil industry supply boats with picturesque names such as the *Cathead* and the *Roughneck*. These sturdy craft carry men and machinery to oil-drilling rigs and barges operating in offshore waters.

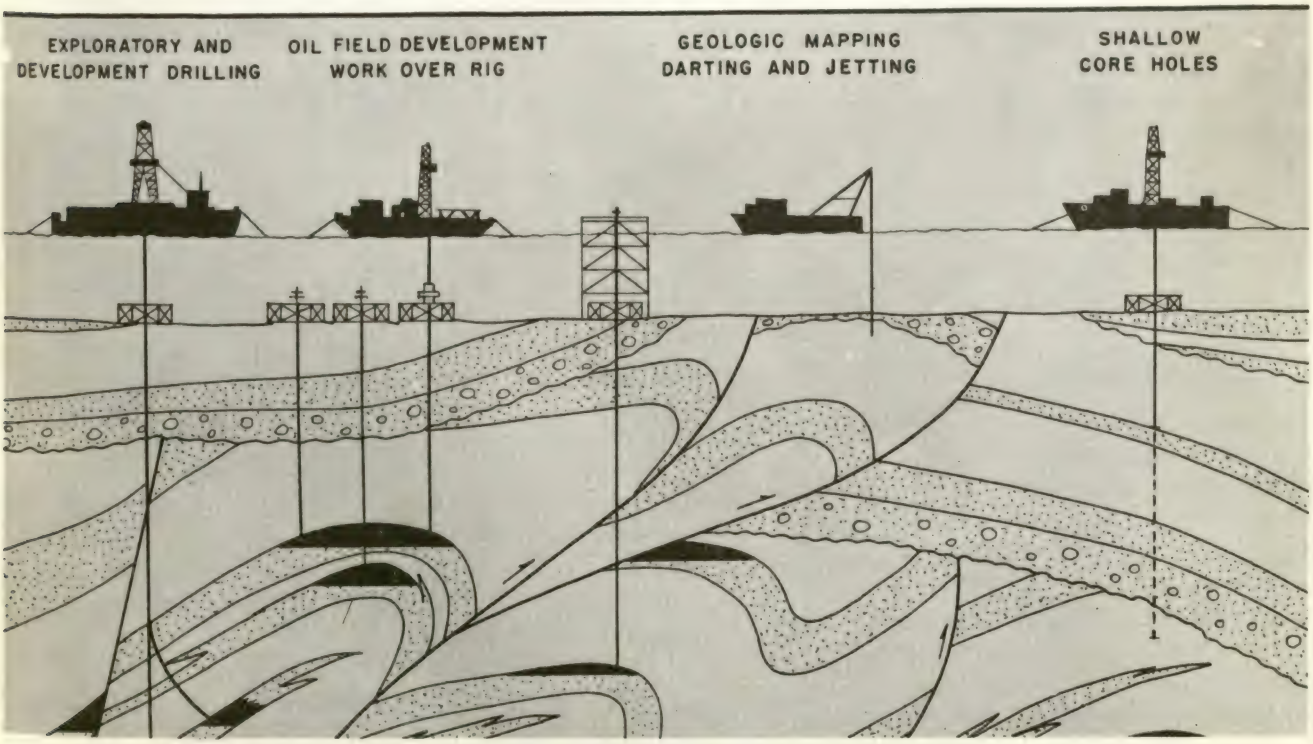
Big, awkward construction barges such as the *Pac-Tow* and the *Cuss I* are also in evidence in the offshore area.

What goes on? What does the oil industry have in store for Santa Barbara's sea frontier?

A Bit of History

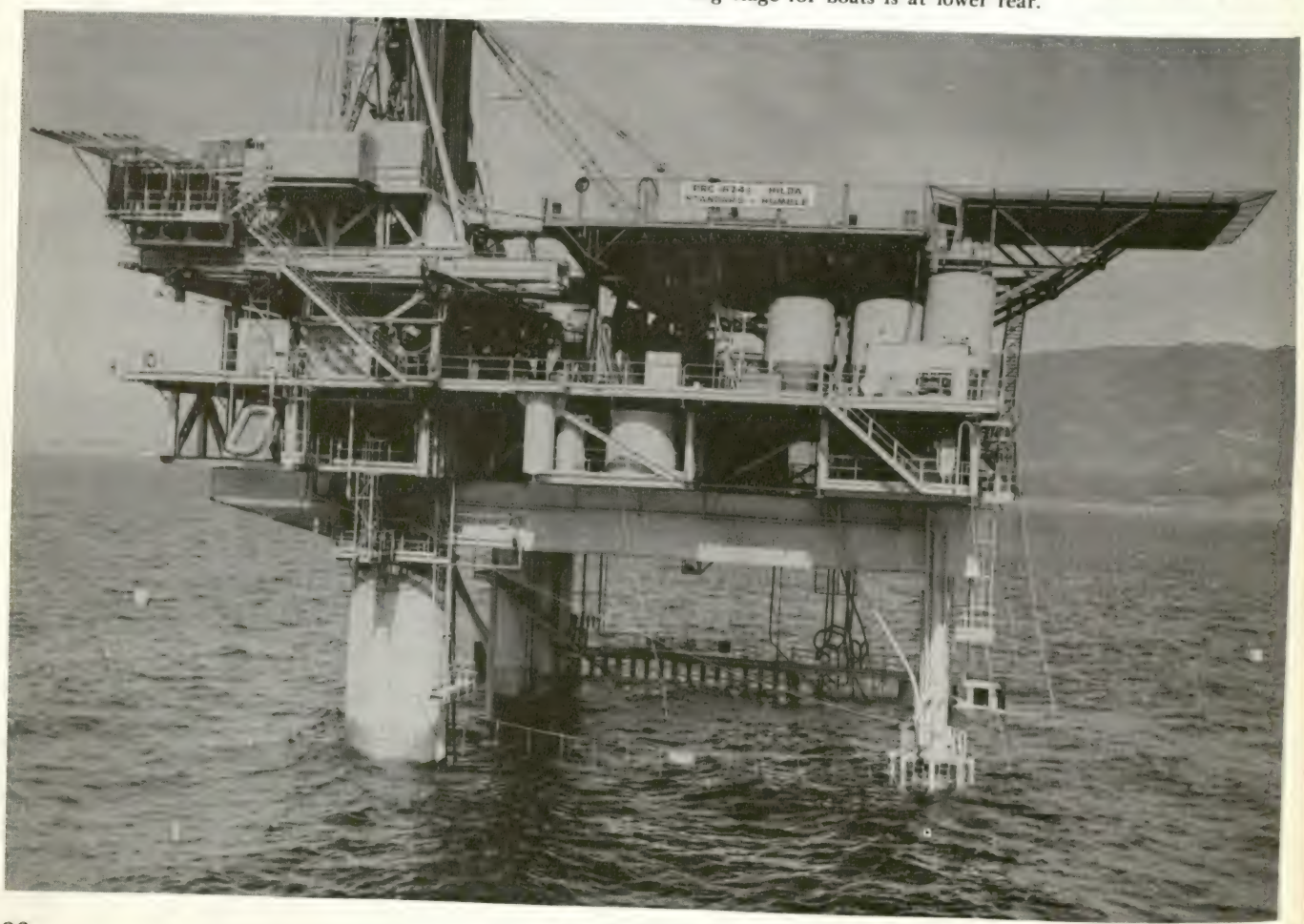
When Spanish explorer Don Gaspar de Portolá arrived in the Santa Barbara area in 1769, he observed seagoing Canaliño Indians building plank canoes and calking them with heavy black tar. The tar came from pits a few miles down the beach, at a location Portolá christened "Carpinteria" in recognition of the Indians' boat-building skill.

The tar was an indication of subsurface oil. In 1887 oil was found in a 24-foot sand layer buried 385 feet below the surface at Ortega Hill, just east of Santa Barbara. Nobody paid much attention to the oil, though, until the coming of the automobile and the motor truck placed a premium on the oozy fluid lying beneath Santa Barbara's coast line.



The *Packer* leaves Santa Barbara harbor, bound for platforms "Hilda" and "Hazel." East Beach bathing pavilion is visible in background, just ahead of the *Packer's* bow. The *Packer* is carrying two tanks of "weight material" (barite) in powdered form. Mixed with water at the platform, the weight material is converted into a heavy mud which is used in the oil wells to hold down the gas pressure. Tanks shown on the *Packer* may also be used to take cement to the platforms, or blue clay for use as a lubricant in drilling. The *Packer* is owned by General Transport Co. of Santa Barbara (Kenneth Elms).

Platform "Hilda," nearer of the two Standard Oil platforms to Santa Barbara, was built in 1960. The tower was constructed in San Pedro and towed to Santa Barbara while floating on its side on the two large, hollow legs shown at left underneath the platform. The structure was then righted and sunk into position and the superstructre (derrick) added. The two big legs, each 16 feet in diameter, contain oil-well casings and fresh water storage. Helicopter landing platform is shown at top right. Landing stage for boats is at lower rear.



The *Packer* stands by platform "Hazel" during final stages of construction (1958). "Hazel" is situated in 100 feet of water offshore from Summerland, about seven miles east of Santa Barbara. "Hazel" was built in a shipyard in San Diego and towed to its present location — in an *upright* position. Buoyancy was provided by air-filled caissons at the bottoms of the tower legs. When the structure reached its destination the air in the caissons was replaced with sea water. This caused the structure to sink to the bottom of the ocean, still in the vertical position. The caissons were filled with concrete to provide a firm foundation. The platform and derrick superstructure (shown in the photograph) were then added, and well casings were put down from the platform. There is room for 25 such casings. "Hazel" can put out a maximum of 8,000 barrels of oil and 40,000,000 cubic feet of gas per day.

The flat platform at left center is a heliport for landing and departure of the helicopter which normally transports workers back and forth between the mainland and the tower.

Another view of "Hilda," showing wooden landing stage (vertical timbers at surface of sea, lower left) at which the *Packer* ties up during her visits. The derrick on top of "Hilda" is movable and assumes whatever position may be required by drilling operations which are conducted through the large, hollow legs.

Seagoing commuters have problems! Men going off shift on oil platform "Hilda" shiver on landing stage on a foggy day as they wait for the *Packer* to take them to Santa Barbara. It seems the helicopter isn't running — fog's too dense. But the *Packer's* radar equipment insures safe transportation home.

Controversy

Today, the subject of oil development is a controversial one, to say the least, among Santa Barbarans. Most citizens, who understandably love their marine view and their relatively clean ocean, fear that current offshore oil development may result in the erection of a veritable picket fence of oil derricks along the sea horizon.

An offshore oil sanctuary prevents the development of oil directly opposite the city of Santa Barbara; but to the east and to the west, all along the sea frontier, offshore oil and gas development is proceeding very rapidly under provisions of the present law which gives supervision of the tidelands to the individual states; and under further provisions of the Shell-Cunningham Tidelands Act of 1955, which enables the State Lands Commission to negotiate exploratory offshore oil leases on a royalty basis.

Engineers May Have The Answer: Underwater Completion

Dyed-in-the-wool nature lovers maintain that no amount of money could compensate for intrusion of oil derricks on Santa Barbara's sea frontier. However, oil industry engineers have recently developed a new process which may ease the situation. This process is known as "underwater completion" of oil wells. In this method of operation, wells are drilled from huge, movable barges such as the *Cuss I.* When drilling has been completed, the derrick-laden barge is towed away and the flow of oil or gas from the well is controlled by a submersible well-head located many feet below the surface of the sea. The oil is pumped to shore through pipe lines laid on the ocean floor. The location of the well-head is marked only by the presence of an identifying buoy. Thus the underwater well-head offers no hazard to navigation, and doesn't intrude upon the marine view.

Oil companies say that under many circumstances underwater completion will prove to be economical for producing offshore wells, since this type of construction eliminates the need for expensive platforms towering from the ocean floor to a height many feet above the surface. In April, 1962, F. J. Hortig, executive officer of the California State Lands Commission, reported in a letter to the Santa Barbara county supervisors that:

"Successful drilling and completion of eight wells in the California offshore has been accomplished by using mobile marine equipment, with the well production control equipment being located on the ocean floor.

"This method of developing has proved to be safe and efficient provided that all operations are properly conducted and that the equipment, including the safety and operating control systems, is well engineered, designed and installed as required by the state."

One Santa Barbaran perhaps expressed the reaction of many citizens as follows: "It would be better if we didn't have to have oil — but if we do, for heaven's sake let's keep it out of sight!"

Men and Boats in Oil Construction Service

Whatever the larger aspect of the offshore oil situation may be, it's certain that many Santa Barbarans earn their living on the sea frontier through employment on the oil derricks and drilling barges, or through ownership or operation of boats and barges which serve the major offshore activities. Many craft, large and small, scurry constantly back and forth between Santa Barbara harbor and various offshore sites. Most of these boats are locally owned. Their services are contracted to various oil companies and drilling organizations for long or short periods. Typical is the *Packer,* solid-looking seaworthy work horse of Kenneth Elms' General Transport Company which has offices near the "Navy Pier" at the foot of Santa Barbara's breakwater. Twenty-four hours a day, in fair weather or foul, the *Packer* plies back and forth to Hazel and Hilda, the Standard Oil Company's two oil derrick platforms situated off Summerland, six miles down the coast from Santa Barbara. The *Packer* carries such cargoes as steel pipe, oil well tools, cement, powdered weight material for holding down the oil pressure, and water. During foggy weather the *Packer* also transports work crews to and from Hazel and Hilda; for at such times the helicopter which normally carries the men to the platforms cannot safely fly. The *Packer* is equipped with an excellent radar by means of which she can find her way unerringly from the harbor to Hazel, and thence onward to Hilda, no matter how thick the fog. Looking into the radar scope one sees a complete and recognizable replica of the coastline from Santa Barbara harbor eastward. This replica is retained in luminous form on the fluorescent screen of the radar scope while the electronic beam rotates slowly and endlessly over its surface, in time with the rotating radar antenna on the mast above. Two bright blobs on the screen indicate Hazel and Hilda. A clear bright line indicates the direction in which the *Packer* is heading at any given instant. As you watch the radar scope you have the sensation of travelling like a small fly across a chart of

the Santa Barbara coast. Sometimes the *Packer* locates, by her radar, small boats in trouble, and takes steps to see that the boats are rescued by the Coast Guard.

Occasionally an outboard motorboat, drifting helplessly out of gas or with engine dead, appeals to Hazel or Hilda for help. The men on the oil towers call the Coast Guard, which proceeds to the rescue.

Work in the offshore oil industry is not without its hazards. In November, 1961, giant waves during a southeast storm capsized the oil-drilling barge *SM-1* off Gaviota beach. The crew leaped onto hovering rescue boats only a few seconds before the storm-battered craft toppled over. Eye-witness to the event was Lee Gardner, Santa Barbara diver and skipper of the *Cathead,* a locally-owned oil service boat. Anticipating trouble, Gardner was in the area with the *Cathead.* The *Ant,* a seagoing tug from Long Beach, was also on the scene. A deckhand on the *Ant* literally plucked the last few men out of mid-air when they jumped from the *SM-1* as she listed heavily for two seconds just before going over.

"The seas were so high that my boat, which is 55 feet long, seemed to stand right on end in the swells," Gardner recalls. "I had to run before each third swell to empty the scuppers so we wouldn't sink from the weight of water on deck." Crews of the *Cathead* and the *Ant* worked without ceasing for twenty-four hours to try to save the *SM-1* (this eventually proved to be hopeless) and to bring the men to Santa Barbara harbor. As the wet and weary ex-crew of the ex-*SM-1* came up the gangplank at Santa Barbara, one of the men was heard to remark: "Well, I guess it's back to the oil fields for us, boys!"

Thus casually and matter-of-factly do the men of the sea frontier view the hazards of their existence.

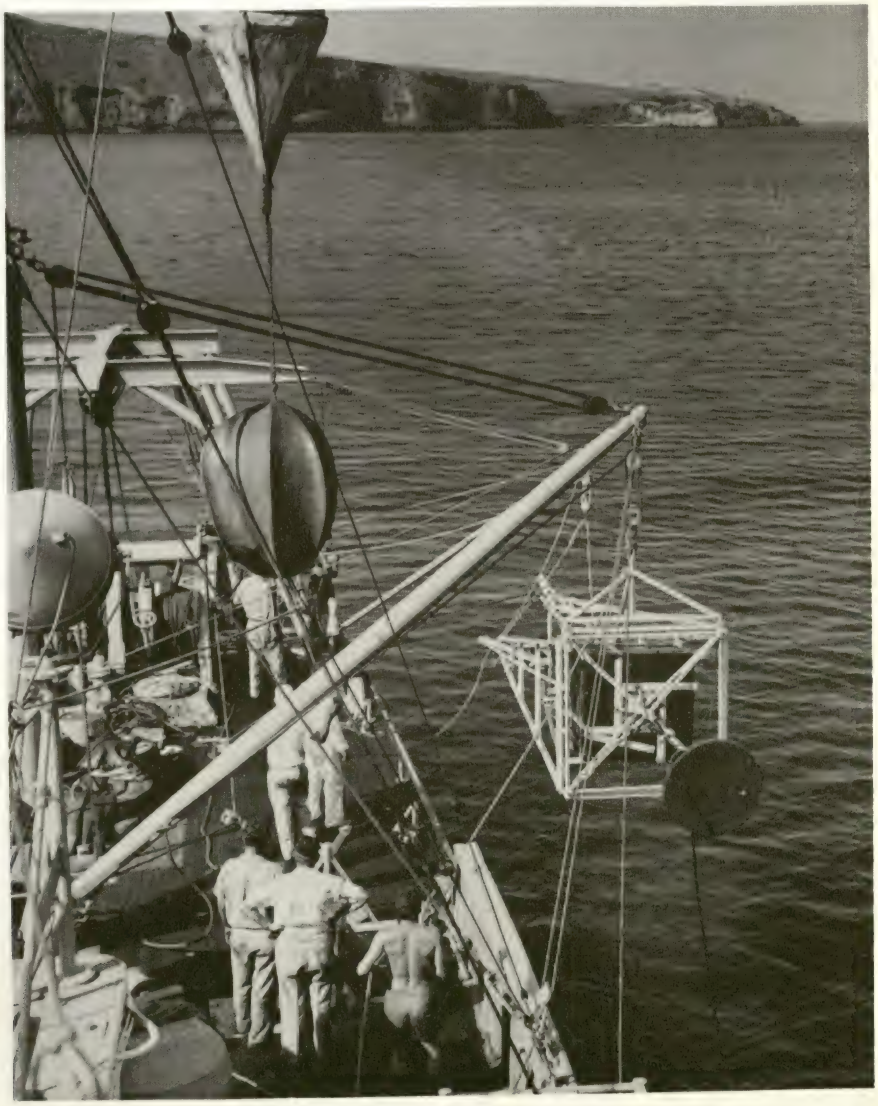
A "hard hat" diver prepares to go down to the foundations of platform "Hilda" to insert shims in the oil-well casing supports. Commercial divers engaged in underwater construction and repair generally use dry suits and helmets with compressed air supply in the classical manner. Service boat is the *Wave Walker,* owned and skippered by Ken Opple of Santa Barbara.

Scientists Probe the Sea Frontier

As you wander along Stearns Wharf or the Navy pier you sometimes witness what appear to be mysterious activities. Vessels bristling with electronic gear tie up to the wharf or the pier. Crew-cut young men wearing sweat shirts and chino pants and carrying slide rules and brief cases hurry ashore. As soon as these young men land they are whisked off in gleaming station wagons, giving bystanders no opportunity to ask questions.

What goes on?

Since 1959, several organizations with facilities in Santa Barbara have been engaging quite extensively in sea-going research activities. Much of what they do is of a secret nature because it involves the national defense. But it is known from press releases that both General Motors Corporation and the Raytheon Company, operating from laboratories near Santa Barbara Airport at Goleta, are conducting research on defense systems having to do with the detection of underwater missiles and underwater enemy craft. In addition, several concerns (of which General Motors is one) are conducting explorations of the ocean floor, doing basic research in marine biology.



Typical oceanic acoustic instrumentation device being made ready for lowering into sea from General Motors research ship *Swan*.

The Sea Operations Department of General Motors' Defense Research Laboratories operates two large vessels in ocean research. These vessels, which may be seen from time to time in and near Santa Barbara harbor, are:

The *Swan,* 150-foot converted mine sweeper devoted to underwater acoustical studies and other defense research, and

The *Frances Ann,* 103-foot ex-freighter now used for deep-sea research in marine biology.

In 1961 the *Swan* traveled to the Caribbean Sea in connection with her investigations. Santa Barbara scientists of General Motors didn't get a long sea voyage out of the project, however. They remained at work in their laboratories until the *Swan* arrived at her destination – at which time the research men were flown to the Caribbean. (A far cry from the old-time procedure of sailing around the Horn!)

Research activities on the *Swan* are necessarily of a secret nature; but those taking place aboard the *Frances Ann* are wide open to public view. "We're doing basic, pure research in a hitherto-neglected area of marine biology," explained Dr. William Clarke, youthful-looking scientist of General Motors, when interviewed in his laboratory.

Dr. Clarke and Dr. William Aron, marine biologists for General Motors, are enthusiastic about their work. Both have extensive backgrounds in marine research and both have published authoritative papers in the field.

Surrounded by shelf upon shelf of glass jars containing a weird but fascinating array of specimens drawn from the deep, Dr. Clarke and Dr. Aron, initially a little shy about discussing their specialty, soon warmed to the subject.

"In spite of the fact that the sea covers over 70 percent of the earth's surface, we know very little about what's in its depths," said Aron. The biologist went on to point out that over half the sea is more than two miles deep – a virtually unexplored territory.

"We know more about the features of the moon, than we know about the features of the bottom of the sea," remarked Clarke.

The scientists went on to explain that even in waters of moderate depth, such as the 300 fathoms (1,800 feet) found in the deepest basin of Santa Barbara Channel, little is known of creatures living in intermediate regions part way down. "We know a good deal about animals and plants that live in the top 200 feet of the ocean," said Clarke. "Purse seiners, gill netters, trollers, sport fishermen, and various government fisheries research agencies tell us a lot about the forms of life existing in the upper regions of the sea. At the other end of the scale, draggers and deep trawlers bring up specimens from the ocean bottom – at least, in areas where the ocean isn't too deep for bottom-fishing operations. But in the middle regions, between bottom and surface, much life exists. Until now no one has bothered to find out much about it."

The two biologists said that attention was drawn to the peculiar nature of the life existing in the middle depths of the sea by "false bottom" indications disclosed by fathometers used on naval vessels during World War II. A ship groping its way along the coast, using its depth-measuring fathometer to guard against too close approach to shore, would find itself confounded at times by an apparent "bottom" that moved up and down at different hours of the day and night! The fathometer works by sending down sound waves which are reflected upward to the ship, the time of travel indicating the distance to the ocean bottom. It was soon realized that the sound waves were in many cases reflected, not by the bottom of the sea but by a dense layer of marine life *which moved up and down in rhythm with daylight and darkness!*

The movable layer of marine life, or "false bottom," has since been named by marine scientists the "Deep Scattering Layer" (DSL for short). In deeper portions of the ocean, it has been found that the DSL may move upward and downward through a range extending from close to the surface at night, to as far down as 3,000 feet on a bright, sunny day. The organisms in the DSL appear to be light-sensitive and to seek a level of constant (extremely small) light penetration.

"Most of the creatures found in the DSL are bioluminescent," said Clarke. "That is, they glow slightly by their own self-produced, cold light." Clarke mentioned finding in the DSL off Santa Barbara specimens of the lantern-fish, which carries on its body many centers of cold-light production. Each center is completely equipped with a reflector, a lens, the necessary light-producing tissue, and a color filter.

The reader may speculate for himself on the possible value to mankind, could the secret of the lantern-fish's cold-light-producing tissue be ferreted out! No more using up fuel oil and hydro-electric power to generate electricity for lighting. Each home could glow independently with the light of a thousand lantern-fish. In fact, each person could go about glowing all by himself like a lantern-fish at the bottom of the sea.

Aron, who has engaged in numerous sea expeditions in search of creatures of the Deep Scattering

Above, General Motors research ship *Swan*. Below, the *Frances Ann*, ex-coastal freighter owned by Dr. W. W. Rand of Santa Barbara. The *Frances Ann* is under charter to General Motors for deep sea biological research in the Santa Barbara Channel area.

Dr. William Clarke, General Motors marine biologist, goes aboard the *Frances Ann* for a deep sea research cruise.

Hauling in trawl net aboard *Frances Ann*. Specimens drawn in are from the "Deep Scattering Layer" of marine life in which Dr. Clarke and Dr. Aron of General Motors are especially interested.

Layer, feels that equipment now available for scooping up specimens from the deep is archaic and completely inadequate. "We use the Isaacs-Kidd midwater trawl," said Aron. "Essentially, this device is identical with the type of net used by Charles Darwin in his original researches a hundred years ago. If you can imagine yourself dashing about in the woods blindfolded, trying to catch bird specimens with a butterfly net, you'll begin to understand how we feel when we use the Isaacs-Kidd trawl in the Deep Scattering Layer."

The array of interesting creatures gathered by Aron and Clarke from the DSL suggests that Aron's evaulation of existing research equipment is a little on the pessimistic side. However, the biologist exclaims disgustedly: "The only specimens we catch are the small, the slow, the sick, and the stupid.

"The question we keep asking ourselves is: *What got away?*"

Perhaps in the near future there will be an Aron-Clarke DSL net to supersede the classical Isaacs-Kidd variety. One fact seems certain: these scientists, driven onward by man's most priceless possession – his curiosity about the universe around him – will find ways to overcome the problems they encounter and will continue to add unceasingly to man's knowledge about the depths of the sea.

In waters near Anacapa Island, SCUBA diver Bob Sharp enters into the spirit of underwater exploration.

Secrets of the Reef

Each new generation has its innovators among those who feel the urge to return to the ancestral sea. Many young men—and young women too—are developing ingenious ways of making a living on, or under, the sea.

With its favorable climate, accessible ocean, and the availability of nearby educational and research facilities, the Santa Barbara area has attracted many new types of professional underwater activities. A partial list would include:

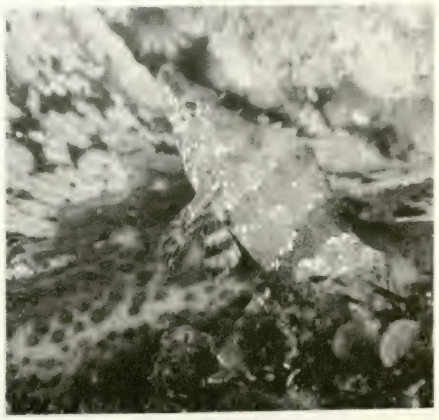
Underwater archaeological research (the finding of remains of Indian civilizations which formerly flourished in the area).

Underwater collection of specimens of marine plant and animal life, for museums, aquariums, and research institutions.

Underwater photography for magazines and books.

Underwater movie-making for showing at clubs and for sale to television programs and adventure-film enterprises.

Interesting fish found on the reef. Left, goby (related to the mudsucker of bays and shallows). Center, ratfish, heartily disliked by commercial fishermen because of damage done by its long, sharp teeth. The ratfish belongs to the chimaera family. Right, blenny, sometimes called kelpfish. This little fellow is only about four inches long and is neatly camouflaged amid his surroundings on the reef.



Archaeology

Upper left, Merlin A. Dobry, anthropologist and expert cameraman, prepares to do a bit of underwater photography in the waters off Anacapa Island. He's hoping to find submerged traces of the ancient Indian culture which once flourished in the Channel Islands area. Upper right, Dobry records data about an Indian artifact. Dobry has a degree in anthropology from the University of Oklahoma. He accompanied Dr. Borhegyi, Director of the Milwaukee Museum, during archaeological studies in Guatemala. In the course of the expedition, many Mayan artifacts were recovered from the depths of Lake Amatitlan. Dobry says: "While studying in Santa Barbara, the rich archaeological and historic significance of the area came to my attention. Under the excellent supervision of Dr. P. C. Orr of the Museum of Natural History, excavation of some of the islands off the Santa Barbara coast has greatly added to the knowledge of early man in this area." Lower left, Dobry with Indian corn grinding bowl similar to type often found near Channel Islands and mainland — presumably washed into the sea by floods or tidal action.

Marine Biology

William C. Jorgensen, biologist, explores the underwater reef for small specimens. "Slurp gun," extreme right, sucks in little fishes with one gulp.

Above water once more, Jorgensen examines a specimen of seaweed known scientifically as *cystoseira osmundacea*. A branch of Giant Bladder Kelp (*macrocystis pyrifera*) lies on deck. Jorgensen has an M.S. degree in biology and teaches the subject at Santa Barbara High School. He has been awarded a National Science Foundation scholarship for study at the Hopkins Marine Institute of Stanford University. The Institute is at Pacific Grove, on Monterey Bay, California.

Underwater television for keeping track of what goes on below the surface of the sea while offshore oil facilities and other marine installations are being built.

Commercial salvage diving and underwater construction and repair work.

Deep-sea diving for underwater research projects such as submarine detection and atomic waste disposal.

Diving for research in marine biology and exploration.

For underwater photographic and exploratory projects, SCUBA gear (Self-Contained Underwater Breathing Apparatus) seems the most convenient and is becoming extremely popular.

Diving with SCUBA gear in waters off Anacapa Island in the Santa Barbara Channel, members of a recent expedition sought to rediscover and photograph relics of the wreck of the *Winfield Scott*. The sidewheeler broke up on Anacapa while carrying a full complement of gold-dust-laden passengers in 1853. Practically every born-and-bred resident of Santa Barbara will tell you that he knows exactly where the wreck of the *Winfield Scott* is lying and can give you minute instructions as to where to find it. However, the young men of the Anacapa expedition, experiencing one of the many occupational hazards of sea exploration, found many interesting things, but not that which they originally sought. Perhaps they may console themselves by remembering the case of Christopher Columbus, who suffered a similar experience.

Making the best of the situation, the divers brought up from the reef many unusual creatures which lurk amid the kelp. The kelp, growing on submerged rocks relatively close to the surface of the sea, doesn't harbor inhabitants of the "Deep Scattering Layer" so greatly prized by research scientists and marine biologists. Or — correction — if creatures of the Deep Scattering Layer do occasionally appear amid the kelp they must be passing through as transient visitors, rather than remaining in the kelp as their permanent adobe. Abalone, lobsters, sharks, surface and near-surface fish of all kinds—these are the true inhabitants of the kelp beds.

The Underwater Forest

Mother and nurse to all the near-surface varieties of marine life is the kelp, which you can study on the shore without assuming SCUBA gear or even getting your feet wet. Fastidious visitors to the beach sometimes become annoyed at the accumulations of loose kelp which gather on the sand and in the shallow water; but these accumulations, though they may attract gnats and entangle swimmers, are a natural residue from the great kelp beds which grow half a mile to a mile offshore. Without the kelp beds, we would have precious little fishing, either from the beach, or from the breakwater, or from the wharf, or from little boats at sea.

Under supervision of the California Department of Fish and Game, the regular harvesting of kelp is done by specially-designed kelp cutters. These ponderous craft with their clanking underwater "mowing machines" work their way along the coast, cutting, grinding and compressing the rich crop. Derivatives of kelp are finding increasing uses in industry. Already this offshore farm product goes into ice cream, toothpaste, automobile tires and many medicines and drugs.

Scientists claim the whole world could be fed by plant products of the sea. A start has been made—but there seems to be some distance still to go in the matter of making derivatives of kelp and other sea plants palatable to the human taste.

How to Get Started in Marine Exploration

Anyone with access to the sea can enjoy a first-hand look at many fascinating bits of underwater life without going to the expense of acquiring complete SCUBA gear (air tanks and pressure-regulating valves). All you need to start with is a face plate (be sure to get a good one made with safety glass), fins, and a short breathing tube or snorkel. Just by putting your face under water, with the clarifying action of the face plate which keeps the water out of immediate contact with your eyes, you can see much that is beautiful and interesting. If you learn to float on the surface with your face plate under water, breathing through a snorkel tube (there *is* a slight trick to it!) your enjoyment will be increased. If you double up like a jackknife and dive a few feet down, the scenery will get better and better; but be sure to leave your ears uncovered, exhale slowly as you come up, and always have a companion with you when you dive.

Responsible SCUBA instructors insist that their pupils become thoroughly proficient in mask-and-snorkel work before letting them use air tanks. So if you begin by having a little fun with mask and snorkel, you'll be starting along the right road and you'll be taking the first step toward learning for yourself the secrets of the reef.

Now for hot coffee and warm clothes after a day exploring the reef.

Little Boat, Big Ocean

Oh Lord, my ship is so small—
And Thy sea is so great.
—Ancient prayer of the sailor

Many individuals, loving the sea, nevertheless become trapped in shoreside jobs and shoreside responsibilities. Such frustrated sailors escape to the sea on weekends in pleasure craft ranging in size from 8-foot dinghies to 80-foot yachts; and ranging in motive power from oars to outboards and from 275 horsepower Interceptors to snowy sails filled with Channel breezes.

There is a peculiar merit, for such as these, in Santa Barbara's sea frontier. A boat can be sliding over ocean swells only a few moments after departing from slip or launching ramp in Santa Barbara harbor. If a boat is large enough, she can go right on over to the Channel Islands and drop the hook in Pelican or Fry's or Lady's harbor.

The islands are closed to public entry; but the sea is free to everyone. With adequate supplies of fuel, food and water, the larger craft habitually sail to the islands on a Saturday, spend the night in one of the beautiful harbors, and fish or cruise along island shores before returning.

Always assuming, that is, the Channel doesn't decide to kick up rough at the wrong time.

A few craft whose home port is Santa Barbara have sailed far beyond the Channel Islands, making it to Hawaii and even to Tahiti. The great white schooner *Volunteer,* which ties up right across from the Navy pier in the harbor, acquitted herself well in the 1953 Transpacific Honolulu race. More recently the slim sloop *Rascal* sailed the Honolulu route, but missed a win because of a broken mast.

Gaff-rigged sloop of classical design sailing off Santa Barbara breakwater on a foggy day. The gaff, at top of sail, provides a four-sided sail form which doesn't seem to be as fast as the newer Marconi rig. However, the gaff rig is beloved by many ocean-going sailors because of its seaworthy qualities. The mast of the gaff-rigged sloop is much shorter than that of a Marconi-rigged sloop of equal sail area, thus keeping the center of force of the wind pressure lower with respect to the hull. This reduces the overturning moment produced by the wind pressure. The mainsail can be reefed for a blow by lowering the gaff part way and securing the lower part of the sail around the boom by means of the short cords shown hanging from the row of small diamond-shaped reinforcements along the sail. The gaff-rigged sloop pictured above has an extra-large jib (triangular foresail) made possible by the long bowsprit. Altogether, the gaff-rigged sloop is a pretty salty craft. Many around-the-world-single-handed sailors have selected a gaff rig for their boats.

On facing page: Upper left, William Irvine, one of the most famous skippers of Santa Barbara, whose specialty is long-distance ocean races. He thinks nothing of skippering a 75-foot craft to Acapulco or Honolulu. Here Irvine is pictured at the wheel of the schooner *Volunteer,* whose home port is Santa Barbara.

Upper right, a good breeze and a slanting deck make sailing fun aboard the *Volunteer.*

Lower right, schooner *Volunteer* of Santa Barbara passes Diamond Head as she approaches buoy marking finish of transpacific race to Honolulu.

Seashell class dinghy fleet racing inside the breakwater, Santa Barbara harbor. Stearns Wharf is shown in background. The little 8-foot "prams" with square bows are launched directly from the beach and are sailed by youngsters eight years old and up. Adults also like to sail the sporty little Seashells – when they can get them away from the kids!

The lovely light-blue schooner *Rejoice,* which ties up near the *Volunteer,* has been across the seas, and her owner has been heard to speak of taking her to the Aegean.

An award for pure old-fashioned venturesomeness should go to owner-skipper Ray Taylor of the little 35-foot ketch *Mariachi.* Taylor sailed his microscopic craft to Tahiti in the 1961 Tahiti race, with his wife, son and daughter-in-law as crew. The *Mariachi* sailed a course all her own, at a pace all her own, and was not seen or heard of by the rest of the fleet for many days; but she showed up triumphantly in Tahiti, long after the other boats had finished the race and accepted their prizes.

Family sailing is the style nowadays. Even on long ocean voyages, wives go along as cooks, foremast hands, navigators, and even as relief helmsman. A few women skippers have entered their own boats in transpacific races.

It isn't necessary to own a costly "big boat" in order to have fun on the water. Kids eight years old and up race 8-foot blunt-bowed Seashell class prams inside Santa Barbara harbor. Outside on the ocean, small racing-class sailboats chase each other around courses which lead them well to sea. In a racing class, all the boats are of the same design and dimensions, so that the skill of the skipper is, presumably, the factor which determines the winner. An old-established, popular and acrobatic racing class in Santa Barbara is the Geary 18 or "flattie"– a long, narrow, flat-hulled, centerboard boat which gets up and planes on top of the water and which, in a blow, requires considerable gymnastic skill on the part of its occupants, to maintain equilibrium.

Recent popular arrivals on the sailing scene are the 14-foot fibreglass centerboard Lido 14 sloops and the fast twin-hulled Catalina catamarans. Favorite standbys of the seagoing small boat sailors are the 18-foot Mercury sloops with well-weighted keels. Designed in the San Francisco Bay region to withstand the worst the Golden Gate can offer, the Mercury heels over in a breeze and sails rail down, while her keel balances her, presumably, against

Santa Barbara's girl sailors. Shirley Howland (at helm) and Penny Marshall (forward) sail Penny's new Mercury-class sloop *Cirrus* in a warm-up for championship racing. The Mercury-class sloop, although only 18 feet long, is well adapted to racing on the ocean offshore from Santa Barbara, since it is equipped with a deep, well-weighted keel which affords stability no matter how strongly the breezes may blow. The Mercury racing fleet of Santa Barbara numbers about 18 boats.

Girls do make good sailors! Shirley Howland has won and placed high in many Mercury-class races, competing against men skippers. She has also participated in competition for selection as west coast representative in the women's national championship Adams Cup sailing races. Shirley wears the emblem of the Santa Barbara Yacht Club.

Lyons class sloop off Santa Barbara on an afternoon when offshore gusts were blowing. The sloop is rigged in the "Marconi" fashion — i.e., the mainsail is triangular, meeting the mast at the peak. The Marconi rig is favored for virtually all racing-class boats today, as it seems to be more efficient aerodynamically than the older-style gaff rig shown at the beginning of this chapter. The tall mast of the typical Marconi rig reaches up above the blanketing ocean swells to intercept all possible breezes.

"Family sailing" on ocean just outside Santa Barbara breakwater. Sloop is of the new fibreglass "Capri" class, having a 200-pound keel for stability. Similar craft can be rented near Navy Pier, Santa Barbara harbor.

capsizing. Nevertheless, Mercury sailors are seen to hike well out to weather when the Channel is doing its stuff.

Santa Barbara's Mercury fleet boasts several competent feminine racing sailors. Shirley Howland of Santa Barbara was runner up for selection as Pacific Coast representative in the 1961 Adams Cup women's national sailing championships.

Most of the area's small-boat racing sailors belong to the Santa Barbara Sailing Association, which has low dues, few meetings, many races, and no clubhouse. The Sailing Association is viewed with benevolent tolerance by the Santa Barbara Yacht Club, which seems distinctly relieved to get "those small-boat sailing fanatics" out of its collective hair. The Yacht Club obligingly helped the Sailing Association get started. The Sailing Association has a fenced compound on the beach a quarter-mile west of the harbor, where members may keep their boats, with the masts in place, ready to be trailered to the harbor. Because of lack of space, few of the small boats are kept in harbor waters, but if space were available, there would be another problem; for the beautiful sleek bottoms grow whiskers of grass and barnacles in no time at all if left in the salt water.

In addition to sailing a small boat, another popular way to have fun out on the ocean (well, not *too* far out on the ocean) is to fish or water ski with the aid of an outboard motor. In many parts of the United States, water skiing is done only on relatively calm, protected bodies of water; but in Santa Barbara the water skiers zoom about in the offshore area east of Stearns Wharf and think nothing of continuing their sport all winter, using foam-rubber "wet suits" to keep warm.

The Coast Guard

You have to go out—but you don't have to come back.
—Unofficial motto, U. S. Coast Guard

Lt. (j.g.) John B. Friel, skipper of Coast Guard cutter CG 95334. Friel has been in the Coast Guard nine years. He came up through the ranks, starting in boot camp at Cape May, N. J. Like many members of his crew, he lives ashore in Santa Barbara; but he and the others are on call night and day. In the photo above, Lt. Friel is studying the rocky shore of Anacapa Island during a logistics run to the island.

Chief Warrant Officer M. K. Reynolds, commander of the Santa Barbara group of shoreside Coast Guard installations, attributes the statement above to John A. Midgett, once the keeper of Coast Guard Station 179 at Chicamacomico, North Carolina, on the Outer Banks north of Cape Hatteras. Many a man of the Coast Guard, on Pacific shores as well as on the east-coast shoals, has gone to the rescue of sinking craft in perilous seas with no thought about his own return from the mission.

Services Performed by the Coast Guard

The Coast Guard operates under the U. S. Treasury Department in peacetime. During time of war, the Coast Guard becomes part of the U. S. Navy.

The Coast Guard maintains lighthouses and other aids to navigation; performs emergency rescue work at sea; patrols the North Atlantic for icebergs; operates weather warning patrol and radio broadcast stations; operates "emergency band" radio rescue operations; guards the nation's ports in time of war; inspects vessels large and small for compliance with federal regulations related to safety at sea; and conducts a vigorous program of safety education among boatmen.

Santa Barbara's sea frontier is part of the Eleventh Coast Guard District, extending from Point Conception to the Mexican border. Rescue facilities of the district include eight aircraft and twenty vessels, with 274 officers and 2,070 enlisted men. During 1960, cutters, planes and personnel of the Eleventh District performed the following services:

Answered 1,978 calls for assistance at sea

Rescued 79 persons in imminent peril of perishing at sea

Assisted 4,721 persons in various kinds of trouble at sea

Saved property and cargo worth an estimated $10,000,000

Inspected 11,622 vessels for compliance with safety regulations

Investigated 2,495 reports of violations of federal safe-operating rules for motorboats

Flagged down 86 cases of harbor pollution

Maintained 247 radio stations, lights, fog signals, and other aids to navigation.

The Coast Guard Auxiliary, an organization of small-boat owners under Coast Guard supervision,

"Santa Barbara's own" Coast Guard cutter CG 95334 leaves Navy Pier in Santa Barbara harbor. Note crew still taking in mooring lines. U.S. ensign on stern staff must be removed at once, since the craft is now underway. Instead of the ensign at the stern, an ensign will soon be run up to the yardarm.

The numerals "95" in the cutter's designation indicate that the vessel is 95 feet long. There are several larger types of cutters in the Coast Guard, such as the 125-foot *Morris* which helped CG 95334 stand by the *SS Chickasaw* when she went aground on Santa Rosa Island in February, 1962. These larger types of cutter don't try to enter Santa Barbara harbor, however. A class of cutter that is very famous is the 83-foot class which stood by the Normandy beachhead on D-day in World War II and rescued many troops from landing barges sunk by enemy fire.

performs extensive services in rendering aid at sea, patrolling regattas, giving free courses in seaman ship and safety at sea to men, women, and children, and performs free, voluntary safety inspections of small craft for compliance with safety regulations if requested to do so by the owners. The Coast Guard itself can't board a vessel for inspection unless she's at sea or known to be just coming in from, or putting out to, the sea. So the Auxiliary saves many new boat owners a lot of trouble and possible danger by performing the courtesy inspections upon request.

The Coast Guard Auxiliary seamanship courses, when given in the Santa Barbara area, are well publicized in the press.

A Santa Barbara Coast Guard Sea Operation

One of the normal duties of CG 95334 is a "logistics run" to Anacapa Island Light Station.

The first two numerals in the designation of a Coast Guard cutter indicate her length; thus the

Santa Barbara cutter is 95 feet long. Earlier cutters stationed at the harbor were 83 feet long, of a more open and unprotected type than the 95-footers.

Cutter 95334 has accommodations aboard for all her personnel, but many of the officers and crew live with their families ashore. Each man boasts that he can be at the harbor "in nothing flat" when need arises. A full operating complement and radio watch is kept aboard the cutter at all times; also a watch in the shore station at the base of the Navy pier.

The "logistics run" to Anacapa is a supply-and-personnel trip conducted regularly each Tuesday. The object is to deliver supplies to, and receive materials from, the isolated rocky Anacapa Light Station; also to take lighthouse personnel to Port Hueneme (in Ventura County east of Santa Barbara) for shoreside business or leave. Typically, on one such run, a heavy ground swell, egged on apparently by northwest winds out of Conception, caused Lt. (j.g.) John B. Friel, skipper of the 95334, to determine that it was unsafe to bring the cutter alongside the shelf-like dock in Anacapa's

Boatswain's Mate 1st Class G. W. Davis at wheel of CG 95334 enroute to Anacapa Island Lighthouse on a logistics (supply) run. Radar scope in background.

Anacapa Island Lighthouse as viewed from Coast Guard cutter approaching on a foggy day. The officer in charge of the lighthouse and of the supporting installation on the rocky island is Engineman 1st Class J. D. Grimes, Jr. Grimes reports that the air-operated diaphragm horn on Anacapa once kept going for 28 straight days, 24 hours a day, without ceasing. "The horn doesn't bother me," says Grimes. "I wake up if it stops — thinking there may be something wrong with it."

In addition to its light and horn, Anacapa station is equipped with a radio beacon which beeps out the signal . — — . on a frequency of 286 kilocycles.

As Coast Guard cutter approaches landing stage at Anacapa Island, a heavy surge from the northwest is noticeable at the base of the cliff. Hoist at top of cliff is used to lower materiel to landing stage; there is a stairway for personnel. A smaller hoist, just visible above peaked roof of white building at landing stage, is used to swing materiel onto and off the deck of the cutter when conditions make such a transfer safe.

Because of the heavy northwest surge running against the base of the cliff, the skipper of the Coast Guard cutter decides it is not safe to take the vessel in to the landing stage. So the cutter backs out without landing. Three Coast Guardsmen who are scheduled to leave the island for business ashore are lowered to the water in a small skiff.

On the facing page, two views of rocky Anacapa Island show, upper, the lighthouse and living quarters, and lower, the cliff side with hoist and landing stage overhanging narrow arm of the sea into which Coast Guard cutter must venture to land men and supplies.

The men are rowed to the cutter, which waits a safe distance from the hungry rocks of Anacapa—and then (below) a lone crewman is elected to row the skiff back to the fog-swept island.

tiny bight-of-the-sea that serves as its only landing facility. So the cutter stood out to sea while Engineman First Class James D. Grimes, officer in charge of the island station, made a hair-raising 100-foot descent (with three seamen) in a tiny lifeboat suspended from Anacapa's overhanging derrick hoist. The boat landed in the sea with something of a splash and made it safely out to the cutter. After Grimes and two shorebound seamen came aboard the 95334, a lone coastguardsman in a life jacket rowed the skiff back to the hoist, looking very small and defenseless under the frowning crags of Anacapa Rock.

The public is not permitted to land at Anacapa Light, except on business at the special invitation of the Coast Guard. There is a public beach of sorts on the large westernmost island of the Anacapa group; but there's no water or fuel supply ashore and scant holding ground for anchors if a blow comes up.

After picking up the men from Anacapa, the cutter ran into Port Hueneme, home of the Pacific Seabees, and naval depot from which most of the supplies for the South Pacific were shipped out during World War II. Great ships of the armed forces still frequent the port of Hueneme.

Its logistics mission accomplished as well as was possible under the circumstances, 95334 ran back to Santa Barbara in the afternoon under clearing skies with a fresh northwest breeze and swell to match. Tying up at the Navy pier in the harbor, the crew secured the cutter and returned to their homes or settled down in their quarters aboard the craft. On the following day the cutter returned to the island (the Coast Guard never gives up) found that the surge had subsided, and completed the intended transfer of personnel and supplies.

As cutter makes her way back toward Santa Barbara after conclusion of the logistics mission to Anacapa Island, Lt. Friel writes his entries in the log.

Careers in the Coast Guard

Skipper Friel of CG 95334, and C.W.O. Reynolds of the Santa Barbara shoreside installation, figure the Coast Guard as a fine career for an able-bodied, intelligent young man who takes to life at sea. Lt. Friel came up through the ranks. Chief Warrant Officer Reynolds is proud of the fact that he's fourth in his family to make a lifetime career in the Coast Guard. Reynolds' father entered the Revenue Service (predecessor of the Coast Guard) in 1885 and operated stations on the dangerous Outer Banks of Hatteras. Reynolds remembers well the fabled Midgett family of the Banks, one of whose members is credited with the slogan quoted at the beginning of this chapter. At isolated stations such as those on the Outer Banks, with only an oar-propelled lifeboat in which to go through the surf to an offshore wreck, the thought that "You have to go out—but you don't have to come back" takes on a strong, personal meaning.

Today a young man entering the Coast Guard has an opportunity to handle sea-going vessels in a way he would not be likely to have in the merchant marine or even in the Navy.

A non-commissioned officer may handle the helm and function as Officer of the Deck during a sea voyage. This coveted post—as the skipper's personal deputy, so to speak—is usually occupied by commissioned officers on large ships in other services.

Some Coast Guard cutters and all the smaller craft such as buoy tenders are skippered by warrant officers or chief petty officers. As in the other services, training schools and training courses help the enlisted man to acquire valuable skills.

Back in Santa Barbara harbor — and all secure. Crewman Simpson adjusts strain on No. 1 mooring line.

Books which tell the story of the Coast Guard and of the lighthouses, for which the Coast Guard is now responsible, are:

Keepers of the Lights, Hans Christian Adamson, Greenberg, New York, 1955.

Historically Famous Lighthouses, US CG-232, pamphlet published by USCG Public Information Division, Washington, D. C.

United States Coast Guard Ships, Planes and Stations, US CG-214, pamphlet published by US GC Public Information Division, Washington, D. C.

Aids to Marine Navigation, US CG-193, pamphlet available from the Government Printing Office, Washington, D. C.

The Hatterasman, Ben Dixon MacNeill, John F. Blair, Winston-Salem, N. C., 1958.

How Do I Get to the Sea Frontier

One way is to join the Coast Guard—if you're young and able-bodied.

Another way, if you're still younger, is to join the Sea Explorers of the Boy Scouts of America, or the Girl Mariners, as the case may be. Both organizations have active groups at Santa Barbara harbor.

If you're not eligible for the above activities, you may rent a sailboat or outboard fishing boat at the boat rental dock close to the Navy pier. On weekends, holidays, summer days you may take an ocean ride up or down the coast aboard the fast power boat *Go-Getter,* based close to the Navy pier. Or you may put to sea from the end of Stearns Wharf aboard a full-day or half-day ocean fishing boat. Skipper Manny Cordero and other operators of these craft are said to be very good at finding the fish where they're biting. It was said by the ancients that: "The gods do not subtract from the allotted span of a man's life, the time spent in fishing."

If you like any or all of the samples described above, you may of course embark on the sea frontier in earnest by going into professional sea activities or by purchasing a sailboat or power cruiser. There are yacht brokers at the harbor, and marine stores ashore. If you think of acquiring a small sailboat, it's most fun to buy one that belongs in a racing class active in Santa Barbara waters. For advice in this matter, consult members of the Santa Barbara Sailing Association.

But even if you haven't the money or the time to invest in renting or buying a boat, there's one sure way to enjoy the sea frontier. This is to beachcomb. To do so in a comprehensive manner, consult the accompanying map and drive to such out-of-the-way frontier beaches as Refugio, Jalama, and Surf. Refugio and Jalama have overnight camping facilities (usually pretty jammed in summer). Surf is a railway station on the Southern Pacific Railroad, to which you can drive by public highway from Lompoc at such times as the coastal area isn't closed off for missile shots from Arguello or Vandenberg. Adjacent to Surf is a tiny, public park (Ocean Beach County Park) which isn't open for night camping but which well repays a daytime visit to its enclosed lagoon and wild sea beach. The surf in this area, best seen from the bluff beyond the railway station, rates with the most magnificent in the world.

To survey the sea frontier in the grand manner and complete comfort, ride the Southern Pacific Daylight Limited to or from San Luis Obispo or San Francisco. The train travels right along the edge of the rugged coastline past Point Arguello Light and Point Conception Light, all the way to Gaviota Beach, through an area completely inaccessible by highway or private automobile.

If, finally, you don't have the time nor the inclination to roar along rails or highway to see the sea frontier, you can get a very fine look at it simply by beachcombing close to Santa Barbara—especially in stormy weather or when fog shrouds the harbor with mystery. At sundown you may walk on the breakwater and watch opalescent tints deepening from pink through purple on harbor and ocean. Or deep in the night, you may stand on the end of the Navy pier and watch a green eye and a red eye materialize out of the darkness—running lights of a sailing craft slipping silently into the harbor from, perhaps, a distant port such as San Francisco—or far Cathay. Who knows?

A walk along Santa Barbara's beach during, or immediately after, a winter storm is a rewarding experience for anyone interested in getting the feel of the sea frontier. In case you're worried about it — each of these birds *does* have two legs; but the birds seem to like to conceal this fact from puzzled strollers along the beach.

A Southern Pacific passenger train passes over a trestle on the seacoast between Gaviota Pass and Point Conception. Riding the Southern Pacific "Daylight Limited" northward from Santa Barbara affords a superb view of rugged seacoast edges of rock layers along the beach, typical of the California coast line in which mountains rise precipitously from the sea.


NORM'S LANDING


OCEAN RIDES
GO GETTER


BOAT RENTALS

On facing page, upper: Full-day and half-day fishing boats put to sea from Norm's Landing at the end of Stearns Wharf. Shown is the full-day boat under command of Manny Cordero.

Center: The *Go-Getter* takes people on fast ocean rides up and down the coast from Santa Barbara harbor, starting from a home base near the Navy Pier.

Lower: Small sailboats may be rented at the dock adjacent to the Navy Pier.

At right, above: David Depweg and Douglas Stephens are apprentices in Santa Barbara Ship 4, Sea Explorers, Boy Scouts of America. The Sea Explorers include lads from 14 to 18 years old. Preparation for becoming a Sea Explorer is obtained through membership in the Sea Scouts (ages 11 to 14). Depweg and Stephens were crewing aboard *Zingara*, a privately-owned cruiser often used as a Coast Guard auxiliary safety patrol boat during sailing regattas off Santa Barbara.

Below: Surfing affords close contact — quite literally — with the sea frontier. A favorite location for surfers is in the lee of Rincon Point, a few miles east of Santa Barbara.

Guardian of the harbor. Henry Machado, for 26 years the night harbor officer, sweeps the horizon with his binoculars to determine what craft are still at sea before darkness closes in. Machado (called "Hank" by everyone who knows the harbor) is never satisfied until he has accounted for the arrival and safe disposition of every boat known to be "outside" when his night duty begins. He has pulled over 100 people out of the water and has tied up countless craft that have gone adrift during heavy storms.

The grey heron usually arrives in the harbor in August or September. Old-timers often base predictions of wet or dry winters on the time of arrival of the herons.

The Queen and her court preside over the Battle of Flowers in Santa Barbara harbor. Early each summer this colorful pageant opens "Semana Nautica," the summer sports festival. Floats laden with flowers and pretty girls pass in review around the harbor. Near Stearns Wharf the participants pelt one another with flowers. The pageant was originated in 1949 by opera and radio star Maria Margelli, who is making a strong effort to bring to Santa Barbara Harbor some of the colorful activities which characterize similar areas in her native Italy.
The Queen and her court are shown on a floating "float" – the *Aquila* – provided by the Richfield Oil Company.

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Sea lions, young and old, occasionally wander into the harbor.

This faithful watchdog stands guard over *Tatoosh*, one of many adventure boats which frequently put into Santa Barbara harbor. Owner Chute of the *Tatoosh* built her himself in the Puget Sound area and has sailed her single-handed from Mexico to Alaska. When last seen in Santa Barbara harbor, he was contemplating a trip to Costa Rica.

Anchors Aweigh!

What's in the Future?

Enjoyment of the vast sea frontier, from Santa Barbara northward around Point Conception, may be made more general in the future. Several projects, now under consideration, will increase the use of this national resource:

1. Establishment of a National Park on one or more of the Channel Islands.
2. Relocation of Point Sal State Park—(now inaccessible).
3. Establishment of several State Park beaches between Point Conception and Gaviota Beach.
4. Construction of a 2,300-boat marina in Goleta Slough.
5. Construction of an east breakwater to protect Santa Barbara harbor from the southeast storms.

A Channel Islands National Park?

The Santa Barbara Channel Islands encompass some of the most ruggedly beautiful scenery on the entire California coast. The islands are also notable for their flourishing and unique wild life, important archaeological remains of the vanished Canaliño Indian civilization, and (in the case of Santa Cruz Island) many charming harbors, caves, and inland camping and picnicking spots.

Because of past depredations by careless hunters, fishermen, and other irresponsible representatives of genus *homo vandalis jerkiensis,* present owners closed the islands to the public. In earlier days, Santa Cruz Island was a paradise for yachtsmen, and the patriarchal Caire family made every seagoing visitor welcome with barbecues, picnics, and the product of the famous island vineyards. Duncan Gleason nostalgically described these happy days in his *Islands and Ports of California.* Gleason considered that the submarine gardens and luminous, turquoise depths of Painted Cave are in every way the equal of Capri's famed Blue Grotto. He also lingered over his description of gemlike Lady's Harbor and its tiny sister, Little Lady's. It is said that in earlier days the shallow pools and lovely waterfall of Little Lady's harbor were considered the private preserve of feminine members of visiting yachting parties. If the ladies took advantage of the opportunity for a fresh-water bath in whatever attire (if any) they had available for the purpose—who would want to stop them?

Many people who are anxious to preserve the wild life and unique flora and fauna and archaeological relics of the Channel Islands, are dubious about the proposed National Park project. These ardent conservationists point out that if you let the public loose on the islands again, you may have a repetition of the fires, cattle shootings, sea-lion huntings, and other vandalisms which nearly

The valuable and nearly extinct sea otter is seen here in a characteristic pose. The lovable creature, whose home is in the kelp beds, is staging a remarkable comeback off our Pacific shores.

Valdez Cave, Santa Cruz Island

destroyed much of the beauty of all the islands in past years. The gentle sea otter, floating harmlessly on his back in the kelp with his paws over his eyes to shade them from the sun, was the victim of commercial greed. Hunted unmercifully during the 1700s and 1800s by otter hunters, among whom Russians were prominent but Americans were by no means absent, the quaint animal finally disappeared from Channel Islands shores. Fierce Kodiak Indians, imported by the Russian otter hunters with the encouragement of Yankee fur traders, were also responsible for the massacre and virtual extinction of the intelligent and highly civilized Canaliño Indians who formerly lived on the Channel Islands in happy balance with the surrounding wild life. Efforts in the last century, to save the remnant of the Indians by transporting them to the mainland, resulted only in their almost immediate destruction by a scourge of measles—a disease to which they had no immunity.

A "Pilgrim" brig, the hard sailing American vessel that brought Yankee traders and hide buyers to the California coast.

In considering the possibility of establishing a National Park on one or more of the Channel Islands, it is necessary to consider how remaining wild life and plants of the islands could be protected against the incursion of diseases and pests against which no immunity has been built up—as well as against the depredations, of course, of the two-legged pest, potentially the most dangerous of all. Proponents of the park project say that national park boundaries might include only a part of one island – presumably Santa Cruz – and that the remainder of all the islands could be protected and patrolled as a national forest, wildlife refuge, wilderness area, or the like. These enthusiasts point out that such tactics have worked out well in the High Sierra of California, where giant sequoia trees and native wild life have been adequately protected while visitors (under strict supervision of rangers and ranger-naturalists) enjoy to the fullest this portion of their national heritage.

A proposal of very special interest to those who love the sea frontier is the possible establishment (as part of the national park) of a submarine-garden area where visitors in mask and snorkel would be conducted through the underwater wonderland by ranger-naturalists wearing SCUBA gear.

How far have proposals for a Channel Islands National Park progressed? There has been much talk, but little observable action. Representatives of the U. S. Department of the Interior visit the islands periodically and go away again with glowing praises. A famous writer-geographer has proposed that the island park be stocked with several exotic species of African wild beasts; but everyone in the know reacts with horror to such a suggestion, on the obvious ground that it would completely upset and destroy the existing flora and fauna, which derive uniquely from a geological time when the islands are believed to have been a land-connected extension of the Santa Monica Mountain chain.

The Secretary of the Interior has asked Congress for $50,000,000 for promotion of federal-state cooperative recreational projects throughout the nation. Many persons might like to see the Channel Islands park (if it materializes) developed as a National Park project conducted on the high level established in Sequoia, Yellowstone, and other national parks.

It is to be hoped that through the cooperation of national and state authorities and forward-looking citizens, an intelligent move may be made in the near future to render the Channel Islands portion of Santa Barbara's sea frontier accessible to those persons able to cherish and enjoy it.

Relocation of Point Sal State Park

A glance at the chart discloses Point Sal as a headland well to the north of Point Conception, at the edge of the level area wherein the Santa Maria River flows to the sea.

In the lee of Point Sal is a fine beach and cove, ideal for camping and surf fishing. The area is one of California's officially constituted state parks. Unfortunately, in recent years it has been found necessary to cut off access to Point Sal because the twisting, precipitous road passes through an area

The great Spanish explorer Cabrillo first visited the California coast in a puny vessel similar to this. Off Santa Barbara, he was greeted by the canoe-building Canalino Indians.

reserved for missile launching emplacements of Vandenberg Air Force Base. So the State of California is in the anomalous position of having a park on its hands, which no one is permitted to visit.

In the 1870s, Point Sal was a seaport, of sorts, for the ranches of the "back country." Small coastal freighters could run under the lee of the headland and discharge or take on cargo, on days when the sea was relatively calm. (The sea is never *really* calm along the coastline north of Conception!)

It is recorded that in the year 1875, 25 teams of horses and mules plodded along the dust-deep road between Point Sal and the newly-established agricultural colony of Lompoc twenty miles to the south. The teams were freighting lumber to Lompoc from schooners precariously anchored just off shore. Wheat, hides and tallow from the surrounding countryside were trundled to Point Sal and dumped over the cliff into waiting barges, in the classic manner described by Dana as having been in operation in the area near San Pedro and the Mission San Juan Capistrano far to the south. Henry Machado, night deputy of the Santa Barbara harbor office, says that one can still see at Point Sal remnants of the oldtime chutes whereby the grains and hides were aimed hopefully at the tiny ships waiting in the cove.

The struggling community of Lompoc lost its collective shirt in an attempt to establish a seaport closer to home than Point Sal. Funds set aside for the establishment of an agricultural college (25 per cent of the gross return from land sales) were diverted by unanimous consent of Lompoc citizens to the construction of a wharf 1,150 feet long at "Lompoc Landing" just north of the mouth of the Santa Ynez River, in the lee of Purisima Point (see map). Almost immediately after its completion, the wharf was totally destroyed, together with much valuable freight, by a storm of a magnitude expected to occur only once in fifty years. It seems this was the fiftieth year. Lompoc never quite recovered from the disaster; for there was no rail communication north or south, and overland travel to the only available market at Santa Barbara required at times as much as three days, when torrents were raging through the stream bed in Gaviota Pass.

Desire of the citizens of northern Santa Barbara County for a sea outlet, or even a sea beach for fishing, appear to have been permanently thwarted (except for the tenuous grasp maintained by the county on the one-mile stretch at Surf) by the necessities of the military bases. So the California State Divsion of Beaches and Parks is hoping to extend the Point Sal park site by adding some beach front north of the limits of Vandenberg Air Force Base. It is said that in the proposed new area there are about five miles of fine shore line and 3,000 to 4,000 acres of picturesque sand dunes which continue the Sahara-like formation for which the mouth of the Santa Maria River valley is famous.

Recapture of access to the true Point Sal area appears for the present quite impossible, and it seems a sensible project to move the park site northward as contemplated.

Proposed New Park Beaches

There are lovely, southward-facing sheltered beaches all along the coastline between Point Conception and Gaviota Beach where the highway turns inland from the sea. These beaches are visible only from the train or from those having permission to travel the ranch roads in the area. With the exception of Jalama Beach State Park they are all on private property, or accessible only through private property. Cojo Beach, in the lee of Con ception itself, is so well sheltered that it has served for many years as an emergency "harbor of refuge" for craft beaten back in the attempt to round Conception northward bound. Cojo was the center for vigorous whaling activities as recently as the early 1900s. Hank Machado recalls going whaling with his sea-captain father in a 26-foot double-ended dory out of Cojo. On one occasion a whale came up under the boat and nearly dumped its occupants into the sea in the classical *Moby Dick* manner.

Whales, when harpooned from the little boats, were towed ignominiously onto the beach and there reduced to whalebone and blubber. Machado

says the rendering of the blubber was done over open fires on the beach or in caves, and that much whalebone is still to be seen on beaches of the area.

In April of 1962, officials of the State Division of Beaches and Parks visited beach and mountain regions in the area west of Gaviota. The land is now mainly held by the Hollister Estate Company, but is being opened up somewhat by the incursion of roads for onshore oil facilities related to the newly-developing offshore wells. The State officials indicated that if funds become available, public beaches and camp grounds may be established between Gaviota and Conception.

Goleta Slough Marina

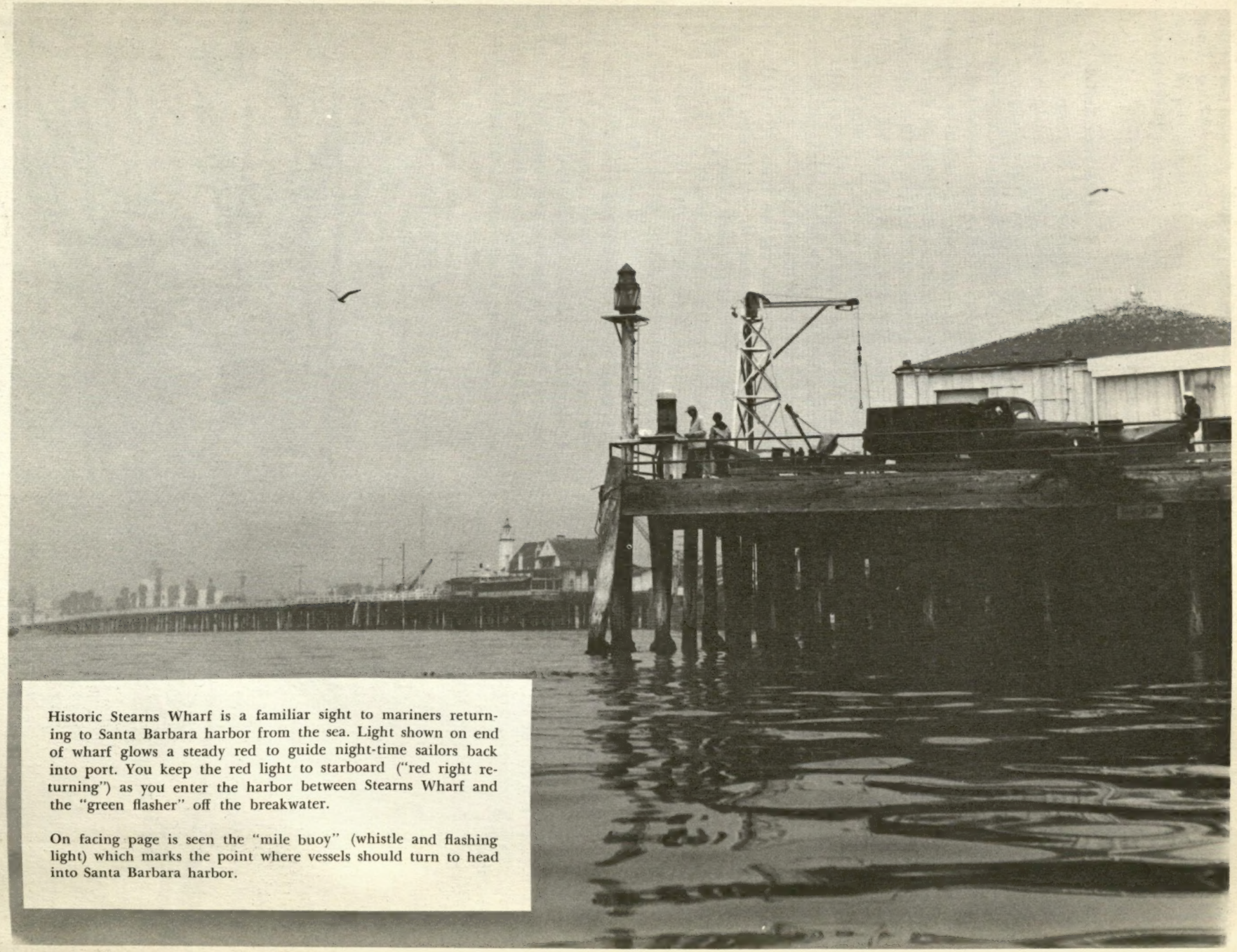
In earlier days the Pacific Ocean lapped the area now occupied by the main street of Goleta; and whaling vessels stood in to a deep slough which wound through marshes now partially filled to form Santa Barbara Municipal Airport and its underlying gas storage facilities.

The slough area, dredged out, might make a good site for a marina because the headlands of More Mesa and Hope Ranch protect it more or less from southeast storms, and the point on which the campus of the University of California now stands gives shelter to the west. Private interests have submitted a proposal to the county authorities for such a marina. Various obstacles of right-of-way and conflicting developments seem to complicate the situation. Certain it is that there is little room in Santa Barbara Harbor for all the craft which wish to tie up there. Many boatmen say that even the addition of the 300-plus new slips under the current $700,000 State Small Craft Harbors development won't take care of the potential demand for mooring and slip space in Santa Barbara harbor. Thus it is hoped, in many boating circles, that the Goleta Slough Marina, or some similar development in adjacent areas, may become a reality.

East Breakwater — Santa Barbara Harbor

The Corps of Engineers, U. S. Army, has developed a comprehensive plan to build a breakwater which would jut out from the shore at a point well to the east of Stearns Wharf, bending around to overlap or nearly meet a seaward extension of the present breakwater. Such a development would largely eliminate the threat of damage to craft in Santa Barbara harbor when southeast storms arise. Richard Henry Dana told how ship captains put hurriedly to sea and sought shelter under the lee of the Channel Islands when the surge began to roll in from the southeast. In recent years, only the semi-natural sandbar which curves inward from the tip of the existing breakwater offers much protection to the harbor during a southeaster. If this sandbar disappears or diminishes, as has sometimes happened in the past, conditions in the harbor are poor.

Proponents of the east breakwater point to these facts. Opponents point to its cost (funds to match the federal funds might be required) and to possible destruction of quaint beauties of Stearns Wharf and the existing harbor. With completion of the new, extended marina and launching ramp in the harbor area, attention may again be focused on the pros and cons of the east breakwater project.



Historic Stearns Wharf is a familiar sight to mariners returning to Santa Barbara harbor from the sea. Light shown on end of wharf glows a steady red to guide night-time sailors back into port. You keep the red light to starboard ("red right returning") as you enter the harbor between Stearns Wharf and the "green flasher" off the breakwater.

On facing page is seen the "mile buoy" (whistle and flashing light) which marks the point where vessels should turn to head into Santa Barbara harbor.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